PROCEEDINGS

OF THE

MADRAS GOVERNMENT

IN THE

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH,

FOR

THE MONTH OF OCTOBER 1888.

Printed by Authority.

MADRAS:
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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

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PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT,

FOR THE MONTH OF OCTOBER 1888.

Irrigation.

READ—the following papers :—

Endorsement from the Collector of Godávari, dated 15th June 1888, No. 27.
Telegram from Koya Ramanna Naidu and Co., dated 27th August 1888.

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 14th September 1888, No. 1415 K.S.

With reference to your memorandum No. II-55 K.S. of 17th July 1888, I have the honor to report as follows :—

1. The head of the Madepalli channel can be moved 100 yards further away from the town of Ellore without loss of efficiency. The removal of the channel this distance, I have ascertained also removes the objection to its construction on the part of the municipality, as also of Messrs. Koya Ramanna and Co., whose telegram on the subject, forwarded to me with your endorsement No. 73 of 28th ultimo, I herewith return. I also return the enclosures to the above-quoted memorandum.

2. There is no objection to the towns-people putting small foot-bridges across the channel, if they so desire it. The maximum depth of water in the channel being only 2 feet and ordinarily only 1½, they would not appear to be necessary.

3. Due provision has been made for passing drainage.

4. I will now issue orders to have the line moved 100 yards eastwards, and to have land plans and schedules prepared.

5. I shall fell obliged by your informing me if this line can be definitely adopted. I cannot shift it to the west without incurring the disapproval of the municipality, or to the east without that of Messrs. Koya Ramanna Naidu and Co.; therefore I presume any opposition raised by the owners of the land through which it is now to be taken will be overruled.

ORDER—dated 1st October 1888, No. 573 I., Public Works.

The Right Honorable the Governor in Council accepts the proposal made by the Superintending Engineer of the II Circle and directs that the head of the proposed

new Madepalli channel be moved 100 yards to the eastward, further away from the town of Ellore; that the new line for the channel be marked out and that the land required for it be taken up as soon as possible.

(True Extract.)

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 1st.

Recd. *Encl.*

G.O., 1st Oct. 1888, No. 573 I.

OCTOBER.

Madepalli Channel, Ellore Canal

Orders approving of the diversion of the — and the acquisition of land required in consequence.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

No. 152 I.

Note by the Chief Engineer for Irrigation.

The Kistna delta completion estimates amounting to Rs. 138,99,784 for direct charges including Rs. 55,34,755, the outlay previously incurred, were sanctioned by the Secretary of State in his despatch No. 9, dated 9th February 1882, printed with G.O., No. 291 I., dated 28th March 1882. In their letter No. 239 I., dated 2nd September 1884, printed with G.O., No. 862 I., dated 22nd September 1884, the Government of India sanctioned a redistribution of the amount and also an estimate of Rs. 10,01,160 for indirect charges. The sum of Rs. 20,000 provided in the latter estimate on account of loss by exchange on payments in England has been transferred from indirect to direct charges with reference to the Government of India Circular No. 107 A.G., dated 24th March 1886, communicated with G.O., No. 963 W., dated 8th April 1886. The estimate for direct charges is therefore Rs. 139,19,784 and that for indirect charges Rs. 9,81,160, making a total of Rs. 149,00,944.

2. The sanction accorded by the Secretary of State expired under para. 1509 of the Public Works Code on the 9th February 1887, but the provisions of this para., which lay down that sanction for an extended period should be applied for before the expiry of the first period, could not be complied with owing to the unavoidable delay in preparing the detailed statement of all the delta works received from the Superintending Engineer and to the necessity for revising it. According to the forecast statements printed with G.O., No. 80 I., dated 29th January 1885, the improvements to the delta works are expected to be completed in 1901-2. Some of the improvements have been completed, others are in various stages of progress, while others again have not yet been commenced. As it is believed that the total amount sanctioned will not be exceeded, revised sanction is not needed; but it is necessary that the general sanction should be extended for a further period of five years from the current year, the currency of sanction being under the para. of the Public Works Code already quoted limited to this period.

3. The Superintending Engineer, II Circle, suggested in his letter No. 1603 K.S., dated 14th December 1887, that this opportunity of making out a revised statement of the estimates for transmission to the Government of India might be taken advantage of for printing a revised abstract of the correct details of current sanctions in supersession of the classified abstract printed with G.O., No. 691 I., dated 30th July 1884, as the several alterations since sanctioned in the amounts of estimates entered in the above abstract rendered it obsolete. A revised abstract was therefore, he considered, absolutely essential for reference in order to avoid mistakes, and to enable the Executive Engineers concerned to know exactly the existing state of sanctions for the works under their charge. The Superintending Engineer's suggestion having been approved, he submitted with letter No. 1967 K.S., dated 21st February 1888, detailed statements; but as these were prepared so as to show only the amounts of estimates and lump sums sanctioned, they have been recast in this office into one statement

showing not only the estimates sanctioned up to date, but also the expenditure incurred to the end of 1887-88, and the further expenditure required to complete each work. The expenditure column of this statement has been filled in in the office of the Examiner of Public Works Accounts. The following is an abstract of this statement:—

—	Sanctioned estimates.	Revised Estimates.			Difference.	
		Expenditure to end of 1887-88.	Further expenditure.	Total.	Increase.	Decrease.
Direct Charges.	RS.	RS.	RS.	RS.	RS.	RS.
Works—						
Old outlay	30,81,755	30,81,755	..	30,81,755	..	..
Completed works	12,08,979	12,10,270	..	12,10,270	1,291	..
Works in progress	32,80,045	16,24,447	16,69,169	32,93,616	13,571	..
Works not commenced	15,81,959	..	15,81,959	15,81,959	..	..
Works not required	28,390	..	..	..	..	28,390
Lump sums for which detailed estimates have not yet been sanctioned ..	15,49,866	5,883	15,57,511	15,63,394	13,528	..
Total ..	107,30,994	59,22,355	48,08,639	107,30,994		
Establishment	25,07,268	14,44,436	10,62,832	25,07,268	..	..
Tools and Plant	6,66,256	4,43,717	2,24,326	6,68,043	1,787	..
Loss by exchange	20,000	9,929	10,071	20,000	..	..
Total ..	139,24,518	78,20,437	61,05,868	139,26,305	1,787	..
Less receipts on Capital account ..	4,734	6,521	..	6,521	1,787	..
Net Total ..	139,19,784	78,13,916	61,05,868	139,19,784	..	..
Indirect Charges.						
Capitalized abatement of Land Revenue ..	5,52,200	2,50,543	3,01,657	5,52,200	..	..
Leave and Pension allowances	4,28,960	2,80,162	1,48,798	4,28,960	..	..
Total ..	9,81,160	5,30,705	4,50,455	9,81,160	..	..
Grand Total ..	149,00,944	83,44,621	65,56,323	149,00,944	..	..

The total direct charges to the end of 1887-88 amounted to Rs. 78,13,916, of which Rs. 21,40,096 have been spent during the period 1882-83 to 1887-88, 1882-83 being the year in which the works were commenced on the Secretary of State's last sanction. The following are the principal works carried out during that period:—

Head works.—Screw-gearing shutters were fitted to the Bezváda under-sluices and $8\frac{1}{2}$ vents were refloored with granite; a wall was built along the river bank below the under-sluices; the roofs of the old workshop buildings were renewed and additional buildings for the workshops were constructed.

Eastern Section.

Ellore canal.—An aqueduct at Kesarapalli and an inlet at Perikeed were completed; the artificial cut to carry the Budameru floods was widened; the Maparru channel was excavated.

Ryves' canal.—The canal was widened; 6 inlets, 3 head-sluices, 3 drops were constructed and improvements to a head-sluice and a bridge were carried out.

Masulipatam canal.—The canal was widened down to full supply level from the head to 4 miles on the right side and to 4 miles 6 furlongs on the left side; improvements to Veeranky lock were carried out.

Pulleru canal.—The head-sluice at Kankipad and the weir at Weyeru were provided with screw-gearing shutters; two head-sluices were constructed and improvements to several other existing head-sluices were carried out; the Gudiváda North-side Mudunur and Motur channels were extended.

Polráz canal.—The canal was widened and extended to the Upputeru river; two locks were completed and five channels were excavated.

Bantumilli canal.—The banks in the first reach were raised; improvements were

carried out to the head-lock; a rest-house was built at Cowtaram; the Kamalápuram lock and lock weir were completed.

Bank canal.—The excavation of the first three miles of this canal was nearly completed.

Drains.—The Vadarevu affluent, the Damidi drain, the upper portion of the Chendrayakodu drain and the improvements and prolongation of the Uppuleru drain were completed and the Vadlamanad affluent and the Pullava drain were nearly so; the Inampudi drain was opened out from Chinna Mutteru to Lankapilli a distance of 9 miles to the full width tentatively sanctioned but only to half the depth; the banks in the first mile of the Lazabanda drain were raised; the Pedda Komileru and Pedda Lanka drains were partly worked out; nearly a mile of the Polráz drain was excavated and the drain below Singanapudi widened.

Western Section.

Main canal.—The widening of the canal in the first, second, first half of the 3rd, 9th, and 12th miles was completed; a great portion of the work in the remaining miles was also done; improvements were carried out to the old escape at Duggirala.

Bank canal.—The Vellatur and Kollur locks were constructed and lock weirs were improved; two rest-houses were completed and one nearly so; a narrow portion of the canal in the 10th mile was widened and improvements to the canal from the 8th to the 17th and from the 22nd to the 23rd miles were in progress.

Commamur canal.—Improvements to this canal in the 2nd, 4th, and 5th reaches were completed, and those in the 1st and 3rd reaches are in progress; the left bank between Jagerlamudi escape and lock was raised and the reach between the Kolimerla lock and Pundla sluice was widened to a bed width of 62 feet; 1 regulator, 4 locks, 2 lock weirs, a tow-path, 2 bridges, 2 rest-houses, 3 aqueducts and 4 outlets were built.

Drains.—The Répalle main drain was completed to the width tentatively sanctioned except 4 miles at the upper end; the Panmalva affluent was completed and the Kavur affluent nearly so; most part of the excavation of a straight cut to connect the Tungabhadra drain with the creek was done; the Sakicalva affluent was almost completed; the Emeleru drain was excavated to a tentative width of 50 feet; 1½ miles of the Karenchedu drain were completed.

4. The excess expenditure incurred on the works completed and those in progress is Rs. 14,862, while the sum rendered available by abandoning the works noted in the margin, which are reported as not required, is Rs. 28,390; the difference of Rs. 13,528 may be added to the lump sum provided for unforeseen works, which will then be increased from Rs. 2,44,470 to Rs. 2,57,998.

	RS.
Masulipatam canal bridge at Kankipad	2,820
Nedumole lock	25,330
Akumarru lock alterations ...	240
Total ...	28,390

5. The receipts on Capital account realized to the end of 1887-88 amounted to Rs. 6,521 or Rs. 1,787 more than the estimate. This increase of Rs. 1,787 and the saving of Rs. 270 effected under Tools and Plant have been added to the balance available to meet unforeseen demands under that head.

6. As there is no reason why the sale-proceeds of beds of tanks superseded by the delta channels should not be credited to the delta as in the case of tank beds in the Pennér and Sangam anicut systems in the Nellore district, a reference was made on this point to the Collector, and that officer stated that in his opinion all sums realized by sale of tank beds in the Kistna delta from the year in which the delta works first came into operation should be written back from Land Revenue, Miscellaneous, to the credit of the delta. The amount realized by sale of tank beds during the last two years is reported to have been amounted to Rs. 5,252, and this sum was credited to Land Revenue, Miscellaneous. Before undertaking the task of ascertaining from the old records the amounts realized from the commencement of the project, which is a work of time, the Collector wished to know whether Government had any objection to the

accounts of previous years being now disturbed. In reply to a reference made by this office, the Board of Revenue stated in their Proceedings, No. 19 M., dated 1st February 1888, that the sale-proceeds of beds of tanks rendered unnecessary by the delta works were not included in the sums credited to the Revenue accounts of the delta in past years, and that they had no objection to the amounts being written back to the credit of the Capital account of the delta; but the question has not yet been finally decided by Government in the Revenue Department.

7. The Superintending Engineer, II Circle, was requested to ascertain and report the probable sale-proceeds of tank beds remaining to be sold in the delta. In reply he has stated that no data for estimating the probable amount of sale-proceeds is at present available. Most of the tanks in the island of Divi will, it is believed, be rendered unnecessary after the completion of the bank canal in the Eastern division, but it cannot be ascertained definitely what tanks will be superseded until this part of the project is worked out in detail. It is therefore proposed that no deduction from the estimated cost of the delta works should be made for the present on account of sale-proceeds of tank beds, past or future, as it will take considerable time to obtain the information required and as the omission of the item will not affect otherwise than favorably the financial results anticipated.

8. The effect of the improvements carried out between 1881-82 and 1886-87 was an extension of irrigation from 287,027 acres in 1881-82 to 337,327 acres in 1886-87, and an increase of revenue from Rs. 9,71,459 to Rs. 11,74,582. The working expenses increased from Rs. 2,58,350 to Rs. 3,40,398, and the financial result decreased from 11·66 to 10·53 per cent. on the capital outlay incurred, as the improvements of old works involved an increase of capital outlay without a proportionate increase in the return. The ultimate financial result anticipated is only 7 per cent.

Ootacamund, (Signed) H. R. MEAD, Colonel, R.E.,
24th September 1888. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Enclosure.

CAPITAL EXPENDITURE ON IRRIGATION WORKS NOT CHARGED AGAINST REVENUE—KISTNA DELTA SYSTEM.

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works.

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
					RS.	RS.	RS.	RS.	RS.	RS.	
1				Old outlay	30,81,755	30,81,755	...	30,81,755	...	...	
				Head works—							
2	No. 1063 I. of 20th Dec. 1883.	(1) B.	...	Kistna river right margin compensation for land.	135	135	...	135	...	...	Completed.
3	No. 106 I. of 29th Jan. 1886.		...	Land acquisition establishment.	840	840	...	840	...	...	Do.
4	No. 100 I. of 7th Nov. 1884 and No. 192 I. of 23rd Feb. 1886.		...	Do. do. ...	1,260	1,260	...	1,260	...	...	Do.
5	No. 216 I. of 19th Mar. 1887.		...	Do. do. ...	660	632	28	660	...	...	
6	No. 326 I. of 6th June 1888.		...	Do. do. ...	550	...	550	550	...	...	
				Total ...	3,445	2,867	578	3,445	...	...	
7	No. 634 I. of 27th Dec. 1877.	(1) C.	...	Eastern side raising	440	326	114	440	...	...	
8	Do. ...		...	Western do.	60	46	14	60	...	...	
9	No. 314-A. I. of 7th April 1883 and No. 792 I. of 2nd Sept. 1884.		...	Under-sluices, fixing experimental shutter to one vent.	759	759	...	759	...	...	Completed.
10	No. 217 I. of 21st Feb. 1884 and No. 659 I. of 25th Oct. 1887.		...	Do. screw-gearing shutters.	10,353	10,353	...	10,353	...	...	Do.
11	No. 825 I. of 23rd Sept. 1885.		...	Reflooring with block granite the under sluices of the Bezváda anicut.	4,610	3,145	1,465	4,610	...	...	Half of the work done.

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Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Head works—*cont.*	RS.	RS.	RS.	RS.	RS.	RS.	
12	No. 915 I. of 28th Oct 1885.	(1) C.	...	Wall along the river bank below under-sluices at Bezváda.	7,205	6,698	507	7,205	...	...	Three-fourths of the work done.
13	Appendix D printed in No. 181 I. of 28th Feb. 1882 and No. 915 I. of 28th Oct. 1885.		...	Anicut raising	1,04,490	...	1,04,490	1,04,490	...	...	Lump sum.
				Total ...	1,27,917	21,327	1,06,590	1,27,917	...	...	
14	No. 364 I. of 31st Mar. 1884 and No. 919 I. of 28th Oct. 1885.	(1) K.	...	Workshop buildings renewing roof.	9,470	9,470	...	9,470	...	...	Completed.
15	No. 443 I. of 29th June 1886.		...	Bezváda Workshop buildings.	31,405	31,611	...	31,611	206	...	Do.
				Total ...	40,875	41,081	...	41,081	206	...	
				Total, (1) Head works ...	1,72,237	65,275	1,07,168	1,72,443	206	...	
				Eastern Section.							
				Main canal—							
16	No. 1389 of 20th May 1871.	(2) B.	...	Compensation for land ...	4,500	5,188	...	5,188	688	...	Completed.
17	No. 756 I. of 23rd Nov. 1880, No. 129 I. of 12th Feb. 1881, and No. 919 I. of 28th Oct. 1885.	(2) D.	...	Head-sluice improvements ...	14,344	14,344	...	14,344	...	...	Do.
18	No. 330 I. of 17th April 1883.	(2) G.	...	Bridge at head, raising parapets.	1,550	1,260	290	1,550	...	...	

19	No. 1389 of 20th May 1871 and No. 919 I. of 28th Oct. 1885.	(2) I.	...	Quay wall	6,546	6,545	...	6,545	...	1	Completed.
20	No. 634 I. of 7th Dec. 1877 and No. 919 I. of 28th Oct. 1885.		...	Head-lock alterations ...	1,299	1,299	...	1,299	...	...	Do.
				Total ...	7,845	7,844	...	7,844	...	1	
21	No. 1389 of 20th May 1871, No. 743 I. of 19th Sept. 1882 and No. 919 I. of 28th Oct. 1885.	(2) L.	...	Canal widening	1,04,962	1,04,962	...	1,04,962	...	...	Do.
				Total, Main canal ...	1,33,201	1,33,598	290	1,33,888	687	..	
22	No. 39-A I. of 16th Jan. 1884.	(2) B.	...	Masulipatam canal — Compensation for land ...	76	76	...	76	...	...	Do.
23	No. 631 I. of 7th July 1884.		...	Do. ...	602	602	...	602	...	...	Do.
24	No. 1007 I. of 27th Nov. 1885 and No. 238 I. of 11th Mar. 1886.		...	Do. ...	145	145	...	145	...	...	Do.
25	No. 754 I. of 15th Nov. 1886.		...	Do. ...	1,055	1,055	...	1,055	...	...	Do.
				Total	1,878	1,878	...	1,878	...	...	Do.
26	No. 213 I. of 3rd Aug. 1877 and No. 919 I. of 28th Oct. 1885.	(2) F_1	...	Inampudi under-tunnel ..	22,205	22,205	...	22,205	...	...	Do.
27	No. 575 I. of 1st July 1885.		...	Sultanagaram under-tunnel improvements.	912	181	731	912	...	...	
				Total ...	23,117	22,386	731	23,117	...	...	
28	No. 747 of 17th Mar. 1865.	(2) G.	13-0	Bridge at Kankipad	2,820	...	...	...	...	2,820	Not required.
29	No. 58 I. of 22nd Jan. 1884 and No. 767 I. of 17th Nov. 1886.	(2) I.	24-6	Veeranki lock alterations ...	893	893	...	893	...	...	Completed.
30	Para. 33 of the Note printed in No. 3528 of 22nd Dec. 1876.		36-50	Nedumole lock	25,330	...	...	....	...	25,330	Not required. Available for transfer to unforeseen works.
31	Do. ...		42-73	Akumarru lock alterations ...	240	...	...	...	...	240	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Masulipatam canal—*cont.*							
32	No. 575 I. of 1st July 1885 and No. 767 I. of 17th Nov. 1886.	(2) I.	46-16	Chinthaguntapalem bridge raising.	319	319	...	319	...	...	Completed.
33	No. 575 I of 1st July 1885.		...	Boat basin improvements ..	660	568	92	660	...	...	
				Total ...	27,442	1,780	92	1,872	...	25,570	
34	No. 747 of 17th Mar. 1865, No. 2308 of 1st Oct. 1872 and No. 919 I. of 28th Oct. 1885.	(2) L.	1 to 4	Sloping banks	9,426	9,426	...	9,426	...	...	Do.
35	No. 747 of 17th Mar. 1865 and No. 919 I. of 28th Oct. 1885.		4 to 12½	Enlarging	65,045	65,045	...	65,045	...	...	Do.
36	No. 575 I. of 1st July 1885.		1 to 12	Improving and widening canal.	1,85,190	55,199	1,29,991	1,85,190	...	...	
37	Do. ...		...	Sixty stone drains	1,140	862	278	1,140	...	...	
38	Do. ...		...	Stubbing trees	5,000	...	5,000	5,000	...	...	
				Total ...	2,65,801	1,30,532	1,35,269	2,65,801	...	...	
39	Do. ...	(2) O.	...	Cattle-crossing at Mogalrazupuram.	822	706	116	822	...	...	Almost completed.
40	Do. ...		...	Cattle-crossing at Yenamalakuduru.	873	781	92	873	...	...	
41	Do. ...		...	Cattle-crossing at Vallur slope.	853	542	311	853	...	...	
42	Do. ...		...	Cattle-crossing at Kanakavalli drain.	905	509	396	905	...	...	
43	Do. ...		...	Cattle-crossing at Inampudi ...	967	545	422	967	...	...	

44	No. 246 I. of 19th April 1888.		...	Demarcating 2nd, 3rd and 5th reaches.	705	...	705	705	...	...	
				Total ...	5,125	3,083	2,042	5,125	...	...	
				Total, (2) Main canals and branches.	3,26,183	1,59,659	1,38,134	2,97,793	...	28,390	
45	Appendix D printed in No. 181 I. of 28th Feb. 1882.	(3) B.	...	Compensation for land required for the west-side channel.	3,000	...	3,000	3,000	...	...	Lump sum.
46	No. 39-A. I. of 16th Jan. 1884.		...	Old claims	893	893	...	893	...	...	Completed.
47	No. 631 I. of 7th July 1884.		...	Do.	302	302	...	302	...	...	Do.
48	No. 618 I. of 18th July 1885.		...	Do.	315	315	...	315	...	...	Do.
49	No. 1007 I. of 27th Nov. 1885 and No. 238 I. of 11th Mar. 1886.		...	Do.	163	166	...	166	3	...	Do.
50	No. 246 I. of 29th Mar. 1887.		...	Do.	49	49	...	49	...	...	Do.
				Total ...	4,722	1,725	3,000	4,725	3	...	
51	No. 3215 of 12th Oct. 1868.	(3) C.	...	Masonry works on west-side channel.	10,436	10,389	...	10,389	...	47	Do.
52	Appendix D printed in No. 181 I. of 28th Feb. 1882.		...	Do. do. ...	7,500	...	7,500	7,500	...	...	Lump sum.
				Total ...	17,936	10,389	7,500	17,889	...	47	
53	No. 3215 of 12th Oct. 1868.	(3) L.	...	West-side channel improving.	38,919	38,919	...	38,919	...	...	Completed.
54	Appendix D printed in No. 181 I. of 28th Feb. 1882.		...	Distributaries	18,000	...	18,000	18,000	...	...	Lump sum.
				Total ...	56,919	38,919	18,000	56,919	...	...	
55	Do. ...	(3) O.	...	Cattle-crossings	1,500	...	1,500	1,500	...	...	Do.
				Total, (3) Distributaries ...	81,077	51,033	30,000	81,033	...	44	
				Total, Masulipatam canal ...	4,07,260	2,10,692	1,68,134	3,78,826	...	28,434	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	Decrease.	
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Pulleru canal—							
56	No. 747 of 17th Mar. 1865.	(2) B.	...	Compensation for land ...	5,000	3,762	1,238	5,000	...	...	
57	No. 452 I. of 8th June 1883.		...	Do. ...	48	47	...	47	...	1	Completed.
58	No. 39-A. I. of 16th Jan. 1884.		...	Do. ...	405	406	...	406	1	...	Do.
59	No. 631 I. of 7th July 1884.		...	Do. ...	132	59	73	132	...	...	Partly completed.
60	No. 908 I. of 9th Oct. 1884.		...	Do. ...	212	212	...	212	...	...	Completed.
61	No. 167 I. of 14th Feb. 1885.		...	Do. ...	129	129	...	129	...	...	Do.
62	No. 746 I. of 15th Nov. 1886.		...	Straightening bend at 20½ miles.	525	849	...	849	324	...	Do.
				Total ...	6,451	5,464	1,311	6,775	324	..	
63	No. 747 of 17th Mar. 1865.	(2) D.	...	Regulating sluice at Pamarru.	7,000	5,114	...	5,114	...	1,886	Do.
64	No. 742 I. of 16th Aug. 1884.		...	Pulleru old head-sluice, providing screw gearing shutters.	805	805	...	805	...	...	Do.
65	No. 767 I. of 17th Nov. 1886.		..	Pulleru new head-sluice, providing screw gearing shutters.	749	749	...	749	...	...	Do.
				Total .	8,554	6,668	...	6,668	...	1,886	

66	No. 747 of 17th Mar. 1865 and No. 919 I. of 28th Oct. 1885.	(2) E.	...	Weyyur calingulah	5,492	5,492	...	5,492	...	...	Completed.
67	No. 922 I. of 14th Oct. 1884 and No. 767 I. of 17th Nov. 1886.		...	Regulator near Weyyur ...	881	881	...	881	...	...	Do.
				Total ...	6,373	6,373	...	6,373	...	...	
68	No. 747 of 17th Mar. 1865.	(2) L.	...	Pulleru, enlarging from Kankipad to Marrivada.	27,900	26,469	...	26,469	...	1,431	Do.
69	Do. ...		...	Pulleru, enlarging from Marrivada to Pamarru.	31,250	35,819	...	35,819	4,569	...	Do.
70	Do. ...		...	Pulleru, enlarging from Pamarru to Cowtaram.	17,000	17,280	...	17,280	280	...	Do.
71	No. 455-A. I. of 3rd May 1884.		...	Pulleru improvements ...	6,210	5,464	746	6,210	...	...	
72	No. 746 I. of 15th Nov. 1886.		...	Straightening bend at 20½ miles.	4,970	4,242	728	4,970	...	...	
				Total ...	87,330	89,274	1,474	90,748	3,418	...	
73	No. 311 I. of 26th Mar. 1885.	(2) O.	...	Gopivanipalem ramp	530	459	71	530	...	...	
74	Do. ...		...	Kamanur ramp	553	592	...	592	39	...	Do.
75	Do. ...		...	Pedakurumadalli ramp ...	562	544	...	544	...	18	Do.
76	Do. ...		...	Gavalagudem ramp	560	565	...	565	5	...	Do.
77	Do. ...		...	Kondiparru do.	435	344	91	435	...	...	
78	Do. ...		...	Pasumarru do.	470	338	132	470	...	...	
79	Do. ...		...	Manudikollu do.	505	304	201	505	...	...	
80	Do. ...		...	Below chattram channel head-sluice.	495	363	132	495	...	...	
81	No. 455-A. I. of 3rd May 1884.		...	Other cattle-crossings ...	2,745	...	2,745	2,745	...	...	Lump sum.
				Total ...	6,855	3,509	3,372	6,881	26	...	
				Total, (2) Main canals and branches.	1,15,563	1,11,288	6,157	1,17,445	1,882	...	
82	No. 455-A. I. of 3rd May 1884.	(3) B.	...	Mudanúr channel	360	25	335	360	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Pulleru canal—*cont.*							
83	No. 455-A. I. of 3rd May 1884.	(3) B.	...	Gudiváda channel	2,450	2,105	345	2,450	...	...	Three-fourths paid.
84	Do. ...		...	Lalpudi do.	60	...	60	60	...	...	Lump sum.
85	Do. ...		..	Golivipalli do.	600	...	600	600	...	...	
86	Do. ...		...	Peddamaddali channel ...	500	...	500	500	...	...	
87	Do. ...		...	Penjendra channel	540	...	540	540	...	...	Do.
88	Do. ...		...	Komaravole do.	200	...	200	200	...	...	Do.
89	Do. ...		...	Palemettakodu extension ...	20	...	20	20	...	...	Do.
90	Do. ...		...	Cherichintala channel ...	20	...	20	20	...	...	Do.
91	Para. 80 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Lower Pulleru	2,000	...	2,000	2,000	...	...	Do.
92	......		...	Kalidindikodu	460	...	460	460	...	...	Do.
93	......		...	Peddatumidi channel ...	1,100	...	1,100	1,100	...	...	Do.
94	No. 371 I. of 5th May 1883.		...	Minor channels	150	149	...	149	...	1	Completed.
95	No. 452-A. I. of 8th June 1883.		...	Do.	85	84	...	84	...	1	Do.
96	No. 39-A. I. of 16th Jan. 1884.		...	Do.	3,090	3,090	...	3,090	...	...	Do.
97	No. 631 I. of 7th July 1884.		...	Kapileswarapuram channel ...	233	233	...	233	...	...	Do.
98	No. 908 I. of 9th Oct. 1884.		...	Do. ...	103	103	...	103	...	...	Do.
99	No. 167 I. of 14th Feb 1885.		...	Do. ...	337	337	...	337	...	...	Do.
100	No. 618 I. of 18th July 1885.		...	Do. ...	25	25	...	25	...	...	Do.
101	No. 426 I. of 21st June 1886.		...	Do. ...	1,925	...	1,925	1,925	...	...	

102	No. 511 I. of 2nd July 1883.		...	Atakodu	173	73	100	173	...	...	
103	No. 1007 I. of 27th March 1885.		...	Do.	40	40	...	40	...	...	Completed.
104	No. 632 I. of 8th July 1884.		...	Bantumilli south-side channel.	2,080	82	1,998	2,080	...	...	
105	Do. ...		...	Kanchadamkodu	400	...	400	400	...	...	
106	Do. ...		...	Sayarazulankakodu	315	...	315	315	...	...	
107	No. 167 I. of 14th Feb. 1885.		...	Do.	97	97	...	97	...	...	Do.
108	......		...	Kokkirayakodu	101	101	...	101	...	...	Do.
109	No. 908 I. of 9th Oct. 1884.		...	Lankakodu old channel ...	24	24	...	24	...	...	Do.
110	No. 373 I. of 16th April 1885.		...	Motur channel	2,775	1,093	1,682	2,775	...	...	Almost completed.
111	No. 360 I. of 12th May 1886.		...	Do. extending ...	540	— 58	598	540	...	...	
112	No. 373 I. of 16th April 1885.		...	Pedapalaparru channel ...	250	58	192	250	...	...	
113	No. 954 I. of 23rd October 1884.		...	Kódúr channel	506	176	330	506	...	...	
114	No. 269 I. of 16th March 1885.		...	Gudiváda new channel, north-side channel.	210	103	107	210	...	...	
115	No. 1007 I. of 27th Nov. 1885.		...	East-side channel, old claims.	192	192	...	192	...	...	Completed.
116	Do. ...		...	Arisapalli channel	18	18	...	18	...	...	Do.
117	Do. ...		...	Channel from Malapaharikodu into good-water channel.	75	75	...	75	...	...	Do.
118	Do. ...		...	Thallapalem branch channel.	9	9	...	9	...	...	Do.
119	Do. ...		...	Ramarazupalem branch channel.	534	534	...	534	...	...	Do.
120	Do. ...		...	Old fresh-water channel ...	75	75	...	75	...	...	Do.
121	Do. ...		...	New do. do.	161	161	...	161	...	...	Do.
122	No. 691 I. of 30th July 1884.		...	Channels in the 5th sub-section, for which estimates have not yet been prepared.	8,115	...	8,115	8,115	...	...	Lump sum.
				Total ...	30,948	9,004	21,942	30,946	...	2	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Pulleru canal—*cont.*							
123	No. 455-A. I. of 3rd May 1884.	(3) C.	...	Mudanúr channel head-sluice.	656	1	655	656	...	...	
124	No. 455-A. I. of 3rd May 1884 and No. 767 I. of 17th Nov. 1886.		...	Gudiváda do. do. ...	2,293	2,293	...	2,293	...	...	Completed.
125	No. 455-A. I. of 3rd May 1884 and No. 919 I. of 28th Oct. 1885.		...	Weir improvements	371	371	...	371	...	...	Do.
126	No. 455-A. I. of 3rd May 1885.		...	Skew-bridge	3,318	3,318	...	3,318	...	...	Do.
127	No. 767 I. of 17th Nov. 1886 and No. 919 I. of 28th Oct. 1885.		...	Regulating sluice	2,199	2,199	...	2,199	...	...	Do.
128	No. 455-A. I. of 3rd May 1884.		...	Six minor sluices	500	...	500	500	...	...	Lump sum.
129	No. 477 I. of 22nd May 1885.		...	Tatwarru channel sluice ...	527	436	91	527	...	...	Nearly completed.
130				Chapakarakodu do. ...	624	498	126	624	...	...	
131	No. 455-A. I. of 3rd May 1884.		...	Head-sluice 16 miles 12 chains.	223	...	223	223	...	...	
132	No. 213 I. of 27th Feb. 1885.		...	Kanamalakodu head-sluice, Gudiváda channel.	750	733	17	750	...	...	
133	No. 981 I. of 19th Nov. 1885.		7-70	Chintalakodu head-sluice, Gudiváda channel.	743	648	95	743	...	...	Do.
134	No. 455-A I. of 3rd May 1884.		...	Two small sluices	150	...	150	150	...	...	Lump sum.
135	Do. ...		11-10′	Chilakalamudi channel head-sluice.	223	98	125	223	...	...	

136	No. 981 I. of 19th Nov. 1885.		13-0	Head-sluice to Itakalakodu, Gudiváda channel.	730	191	539	730	...	...	Completed.
137	Do. ...		16-60′	Head-sluice to Bhumikodu, Gudiváda channel.	863	245	618	863	...	...	
138	No. 455-A. I. of 3rd May 1884.		17-70′	Head-sluice	223	...	223	223	...	...	
139	No. 256 I. of 11th March 1885 and No. 767 I. of 17th Nov 1886.		...	Drop Bantumilli, south-side channel	215	215	..	215	...	..	
140	No. 269 I. of 16th March 1885.		...	Head-sluice, north-side channel, below the skew-bridge on the Gudiváda channel.	439	353	86	439	...	...	
141	No. 373 I. of 16th April 1885.		...	Motur channel head-sluice ...	2,200	1,711	489	2,200	...	...	
142	Do. ...		...	Six minor sluices at Rs. 414 each.	2,484	116	2,368	2,484	...	...	
143	Do. ...		...	Pedapalapurru channel head-sluice.	480	196	284	480	...	...	
144	No. 426 I. of 21st June 1886.		...	Kapileswarapuram channel head-sluice.	385	...	385	385	...	...	
145	Do. ...		...	Kapileswarapuram channel sluice.	215	...	215	215	...	...	
146	Do. ...		...	Kapileswarapuram channel four minor irrigation sluices.	700	...	700	700	...	...	
147	Do. ...		...	Kapileswarapuram channel tail escape.	300	...	300	300	...	...	
148	Do. ...		...	Kapileswarapuram channel demolishing and revetting present tail escape.	68	...	68	68	...	...	
149	Do. ...		...	Kapileswarapuram channel another tail escape.	195	...	195	195	...	...	
150	No. 455-A. I. of 3rd May 1884.		...	Golivipalli channel head-sluice.	656	485	171	656	...	...	
151	Do. ...		2-0	Golivipalli channel drop ...	305	116	189	305	...	...	
152	Do. ...		3-0	Do. ...	295	104	191	295	...	...	
153	Do. ...		4-0	Do. ..	310	105	205	310	...	...	
154	Do. ...		...	Pamarru channel head-sluice improvements.	519	387	132	519	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Pulleru canal—*cont.*							
155	No. 455-A. I. of 3rd May 1884.	(3) C.	...	Pamarru channel, Penjendra branch, one head-sluice and one drop.	600	...	600	600	...	...	Lump sum.
156	Do. ...		...	Pamarru channel, Komaravole branch head-sluice.	223	...	223	223	...	...	
157	Do. ...		...	Pamarru channel culvert under road.	150	...	150	150	...	...	Do.
158	Do. ...		...	Palakodu channel head-sluice.	850	884	...	884	34	...	
159	Do. ...		...	Do. Chittram channel head-sluice.	830	826	4	830	...	...	
160	Do. ...		...	Palakodu channel high-level sluice with dam in rear in the left bank of Pulleru.	496	...	496	496	...	...	
				Lower Pulleru—							
161	No. 423 I. of 29th April 1884 and No. 919 I. of 28th Oct. 1885.		...	Head sluice	553	553	...	553	...	...	Completed.
162	Para. 80 of the Note printed with No. 3528 of 22nd Dec. 1876.		...	Bridge on Argole road ...	1,500	...	1,500	1,500	...	...	Lump sum.
163	......		...	Tail escape	420	...	420	420	...	...	
164	Para. 80 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Tadicherlakodu head-sluice	645	...	645	645	...	...	
165	Do ...		...	Tail escape	390	...	390	390	...	...	
166	Do. ...		...	Kalidindikodu head-sluice...	615	...	615	615	...	...	
167	Do. ...		...	Do. bridge ...	905	...	905	905	...	...	
168	Do. ...		9-0	Regulating bridge ...	950	...	950	950	...	...	

169	Do. ...		...	Tail escape	465	...	465	465	...	...	
170	Do. ...		...	Peddatumidi branch head-sluice	710	...	710	710	...	...	
171	Do. ...		...	Bridge on Argole road ...	1,500	...	1,500	1,500	...	...	
172	Do. ...		...	Tail escape	485	...	485	485	...	...	
173	Do. ...		...	Fifteen minor sluices ...	5,250	...	5,250	5,250	...	...	Lump sum.
				5th Sub-section—							
174	No. 358 I. of 30th April 1883 and No. 919 I. of 28th Oct. 1885.		...	Yedlakodu surplus weir ...	1,212	1,212	...	1,212	...	...	Completed.
175	No. 511 I. of 2nd July 1885 and No. 919 I. of 28th Oct. 1885.		...	Atakodu sluice	250	250	...	250	...	...	Do.
176	No. 691 I. of 30th July 1884.		...	Masonry works on distributaries for which detailed estimates have not been prepared.	45,753	574	45,179	45,753	...	...	Lump sum.
				Total ...	88,911	19,118	69,827	88,945	34	...	
177	No. 747 of 17th March 1865.	(3) L.	...	Pamarru channel enlarging ...	3,870	...	3,870	3,870	...	...	
178	No. 455-A I. of 3rd May 1884.		...	Mudanúr channel	2,625	1,451	1,174	2,625	...	...	
179	Do. ...		...	Gudiváda do.	23,790	22,072	1,718	23,790	...	...	Nearly completed.
180	No. 791 I. of 2nd Sept. 1884.		6-60′	Minor do.	100	72	28	100	...	...	
181	No. 455-A I. of 3rd May 1884 and No. 919 I. of 28th Oct. 1885.		7-70′	Chintalakodu	296	296	...	296	...	...	Completed.
182	No. 455-A I. of 3rd May 1884.		...	Lalpudi channel	810	...	810	810	...	...	
183	No. 954 I. of 23rd Oct. 1884.		...	Kódúr channel extending ...	790	640	150	790	...	...	
184	No. 373 I. of 16th April 1885.		...	Motur channel	6,753	6,576	177	6,753	...	...	Almost completed.

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No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Pulleru Canal—*cont.*							
185	No. 373 I. of 16th April 1885 and No. 767 I. of 17th Nov. 1886.		...	Peddapalaparru channel ...	447	447	...	447	...	...	Completed.
186	No. 455-A I. of 3rd May 1884.		13-60′	Minor channel	300	...	300	300	...	...	Lump sum.
187	Do. ...		16-20′	Do.	250	...	250	250	...	...	Do.
188	Do. ...		17-70′	Do.	200	...	200	200	...	...	Do.
189	No. 426 I. of 21st June 1886.		...	Kapileswarapuram channel ...	2,766	2,766	...	2,766	...	...	Nearly completed.
190	No. 360 I. of 12th May 1886.		...	Motur channel extending ...	6,340	5,137	1,203	6,340	...	...	
191	No. 269 I. of 16th March 1885 and No. 659 I. of 25th Oct. 1887.		...	Gudiváda new channel, north-side channel.	537	537	...	537	...	...	Completed.
192	No. 455-A I. of 3rd May 1884.		...	Golivipalli channel	4,430	...	4,430	4,430	...	...	
193	Do. ...		...	Peddamaddali do.	3,340	...	3,340	3,340	...	...	
194	Do. ...		...	Penjendra do.	2,090	...	2,090	2,090	...	...	
195	Do. ...		...	Komaravole do.	400	...	400	400	...	...	Lump sum.
196	Do. ...		...	Polemettakodu	100	...	100	100	...	...	Do.
197	Do. ...		...	Cherichintala channel ...	100	...	100	100	...	...	Do.
198	Do. ...		...	Lower Pulleru do. ...	12,700	...	12,700	12,700	...	...	Do.
199	Para. 80 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Kalidindikodu	2,135	...	2,135	2,135	...	...	Do.
200	Do. ...		...	Peddatumidi channel ...	6,130	...	6,130	6,130	...	...	
201	Do. ...		...	Fifteen minor channels ...	7,500	...	7,500	7,500	...	...	Do.

				5th Sub-section—							
202	No. 511 I. of 2nd July 1883 and No. 919 I. of 28th Oct. 1885.		...	Atakodu	1,056	1,056	...	1,056	...	...	Completed.
203	No. 632 I. of 8th July 1884.		...	Buntumilli south-side channel.	7,170	1,454	5,716	7,170	...	...	
204	Do. ...		...	Sayarazulankakodu ...	2,920	...	2,920	2,920	...	...	
205	Do. ...		...	Kanchadamkodu	3,380	...	3,380	3,380	...	...	
206	No. 691 I. of 30th July 1884.		...	Distributaries	75,617	...	75,617	75,617	...	...	Lump sum.
				Total ...	1,78,942	42,504	1,36,438	1,78,942	...	...	
				Gudiváda channel—							
207	No. 311 I. of 26th March 1885 and No. 659 I. of 25th Oct. 1887.	(3) O.	...	Yelamarru ramp	404	404	...	404	...	...	Completed.
208	No. 311 I. of 26th March 1885.		...	Malapalli ramp ...	510	359	151	510	...	...	Nearly completed.
209	No. 311 I. of 26th March 1885 and No. 659 I. of 25th Oct. 1887.		...	Idulamaddali do. ...	481	481	...	481	...	...	Completed.
210	No. 311 I. of 26th March 1885.		...	Chinavanigudem do. ...	546	503	43	546	...	...	
211	Do. ...		...	Mandapad do. ...	606	628	...	628	22	...	Nearly completed.
212	Do. ...		...	Gudiváda do. ...	526	664	...	664	138	...	Do.
213	Do. ...		...	Dondapad do. ...	552	694	...	694	142	...	Do.
214	Do. ...		...	Ankanagudem do. ...	625	493	132	625	...	...	
215	Do. ...		...	Anamanapudi do. ...	585	132	453	585	...	...	
216	Do. ...		...	Rudrapaku do. ...	562	114	448	562	...	...	
217	Do. ...		...	Woonikili do. ...	647	124	523	647	...	...	
218	No. 455-A I. of 3rd May 1884.		...	Pamarru cattle-crossing ...	500	...	500	500	...	...	Lump sum.
219	Do. ...		...	Palakodu	185	...	185	185	...	...	Do.
220	No. 426 I. of 21st June 1886.		...	Kapilesweram channel, demarcation stones.	40	...	40	40	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Pulleru canal—*cont.*							
221	No. 426 I. of 21st June 1886.	(3) O.	...	Kapilesweram channel, four cattle ramps.	720	...	720	720	...	...	
222	Para. 80 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Lower Pulleru, cattle-crossings.	1,800	...	1,800	1,800	...	...	Lump sum.
223	Appendix D printed in No. 181 I. of 28th Feb. 1882.		...	Do. do. on distributaries in the 5th sub-section.	9,723	...	9,723	9,723	...	...	Do.
				Total ...	19,012	4,596	14,718	19,314	302	...	
				Total, (3) Distributaries ...	3,17,813	75,222	2,42,925	3,18,147	334	...	
				Total, Pulleru canal ...	4,33,376	1,86,510	2,49,082	43,592	2,216	...	
				Pamarru junction canal—							
224	No. 488 I. of 20th June 1883.	(2) B.	...	Compensation for land ...	92	92	...	92	...	...	Completed.
225	No. 3089 of 5th Oct. 1867.	(2) G.	...	Regulating bridge	1,350	1,325	25	1,350	...	...	
226	No. 810 I. of 23rd Nov. 1886.		...	Substituting iron girders to the existing arch of the bridge over the canal.	2,500	1,296	1,264	2,500	...	...	Three-fourths work done.
				Total ...	3,850	2,621	1,229	3,850	...	...	
				Total, Pamarru junction canal.	3,942	2,713	1,229	3,942	...	...	

				Polraz canal—							
227	No. 389 I. of 10th May 1883.	(2) B.	...	Compensation for land ...	5,025	1,804	3,221	5,025	...	...	
228	No. 39-A I. of 16th Jan. 1884.		...	Do.	430	416	14	430	...	...	
229	No. 908 I. of 9th Oct. 1884.		...	Do. old claims ...	62	62	...	62	...	...	Completed.
				Total ...	5,517	2,282	3,235	5,517	...	...	
230	No. 448 I. of 2nd May 1884.	(2) D.	...	Head-sluice improvements ...	1,240	1,240	...	1,240	...	...	Do.
231	Para. 77 of the Note printed in No. 3528 of 22nd Dec. 1876.	(2) G.	...	Lingala bridge	5,900	...	5,900	5,900	...	...	
232	No. 448 I. of 2nd May 1884 and No. 767 I. of 17th Nov. 1886.	(2) H.	...	Outlet into Chinakommileru ..	1,932	1,932	...	1,932	...	...	Do.
233	No. 162 I. of 19th Feb. 1883 and No. 767 I. of 17th Nov. 1886.	(2) I.	...	Head lock	19,652	19,652	...	19,652	...	...	Do.
234	No. 448 I. of 2nd May 1884.		...	Vijeram lock	20,725	19,943	782	20,725	...	...	
235	No. 448 I. of 2nd May 1884 and No. 919 I. of 28th Oct. 1885.		...	Do. weir	1,931	1,931	...	1,931	...	...	Do.
236	No. 328 I. of 26th April 1886.		...	Tidal lock at Tadinada ...	31,930	29,333	2,597	31,930	...	...	Nearly completed.
237	No. 448 I. of 2nd May 1884.		...	Do. weir at Tadinada ...	3,075	2,788	287	3,075	...	...	Do.
238	No. 389 I. of 10th May 1883 and No 659 I. of 25th Oct. 1887.		...	Raising banks to hold up water for navigation.	3,584	3,584	...	3,584	...	...	Completed.
				Total ...	80,897	77,231	3,666	80,897	...	...	
239	No. 541 I. of 9th July 1883 and No. 919 I. of 28th Oct. 1885.	(2) K.	...	Rudraveram rest-house ...	1,722	1,722	...	1,722	...	...	Do.

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				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Polraz canal—*cont.*							
240	No. 262 I. of 2nd May 1888.	(2) K.	...	Tadinada tappal lascar's shed.	311	...	311	311	...	...	
241	Para. 77 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Two rest-houses	2,600	...	2,600	2,600	...	...	Lump sum.
				Total ..	4,633	1,722	2,911	4,633	...	...	
242	No. 389 I. of 10th May 1883.	(2) L.	...	Canal extensions	39,902	37,719	2,183	39,902	...	...	Three-fourths work done.
243	No. 311 I. of 26th March 1885.	(2) O.	...	Gudlavalleru ramp	465	232	233	465	...	...	
244	Do. ...		...	Vinnakota do.	470	365	105	470	...	...	
245	Do. ...		...	Avadoddi do.	490	409	81	490	...	...	
246	Do. ...		...	Guraza and Kódúr ramp ...	524	177	347	524	...	...	
247	Do. ...		...	Vadali and Peyyeru ramp ...	590	597	...	597	7	...	Completed.
248	Do. ...		...	Dakaram ramp	589	595	...	595	6	...	Do.
249	Do. ...		...	Kamikollu do.	466	438	...	438	...	28	Do.
250	Do. ...		...	Lingala do.	438	427	...	427	...	11	Do.
251	Do. ...		...	Mandavalli and Perikigudem ramp.	428	397	...	397	...	31	Do.
252	Do. ...		...	Kornipad ramp	376	343	...	343	...	33	Do.
253	Do. ...		...	Rudraveram ramp	382	350	...	350	...	32	Do.
254	Do. ...		...	Syamalambapuram ramp ...	394	371	...	371	...	23	Do.
255	Do. ...		...	Vinjiram ramp	273	265	8	273	...	...	
256	Do. ...		...	Rachapatnam ramp	300	203	...	203	...	97	Do.
257	Do. ...		...	Arthigalapad do.	290	243	...	243	...	47	Do.
258	Do. ...		...	Kallapalem and Seethanapalli ramp.	292	219	...	219	...	73	Do.
259	Do. ...		...	Konduru ramp	322	229	...	229	...	93	Do.
260	Do. ...		...	Tadinada do.	306	228	...	228	...	78	Do.

261	Do. ...		...	Appapuram do.	...	207	...	207	207	...	Do.
				Total ...	7,395	6,295	774	7,069	...	326	
				Total, (2) Main canals and branches.	1,47,416	1,28,421	18,669	1,47,090	...	326	
262	No. 250 I. of 25th April 1888.	(3) A.	...	Surveying and levelling, lascars for.	378	...	378	378	...	...	
263	Para. 77 of the Note printed in No. 3528 of 22nd Dec. 1876.	(3) B.	...	Chevurukodu channel ...	7,500	41	7,459	7,500	...	...	Lump sum.
264	Do. ...		...	Kalidindi do. ...	590	...	590	590	...	...	
265	Do. ...		...	Kondangi do. ...	610	...	610	610	...	...	
266	Do. ...		...	Muttagunta do. ...	635	...	635	635	...	...	
267	Do. ...		5-20′	Chigurukota do. ..	1,000	49	951	1,000	..	...	Do.
268	Do. ...		14- 0′	Kykalur do. ..	1,272	...	1,272	1,272	...	...	
269	No. 157 I. of 1st March 1888.		...	Compensation for loss sustained on account of the overflow of the Kykalur channel.	3,000	...	3,000	3,000	...	...	
270	No. 389 I. of 10th May 1883.		18-41′	Ramaveram channel	695	241	454	695	...	...	Nearly completed.
271	Do. ...		...	Tadinada do.	368	128	240	368	...	...	Do.
272	No. 39-A. I. of 16th Jan. 1884.		...	Minor do.	5	5	...	5	...	...	Completed.
273	No. 247 I. of 10th March 1885.		...	Rudraveram side channel ..	150	57	93	150	...	...	
				Total ...	15,825	521	15,304	15,825	...	...	
274	Para. 77 of the Note printed in No. 3528 of 22nd Dec. 1876.	(3) C.	...	Twenty-five minor sluices ...	5,000	...	5,000	5,000	...	...	Lump sum.
275	Do. ...		...	Chevurkodu channel head-sluice.	500	1,050	...	1,050	550	...	
276	Do. ...		...	Argole road bridge	2,925	...	2,925	2,925	...	...	
277	Do. ...		...	Do.	2,705	...	2705	2,705	...	...	
278	Do. ...		...	Regulator	1,355	...	1,355	1,355	...	...	
279	Do. ...		...	Tamarkota bridge	2,810	...	2,810	2,810	...	..	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Polraz canal—*cont.*							
280	Para. 77 of the Note printed in No. 3528 of 22nd Dec. 1876.	(3) C.	...	Kalidindi bridge	2,695	...	2,695	2,695	...	...	
281	Do. ...		...	Kalidindi and Upputeru bridge and drop.	3,535	...	3,535	3,535	...	...	
282	Do. ...		...	Regulator	580	...	580	580	...	...	
283	Do. ...		...	Tail escape	575	...	575	575	...	...	
284	Do. ...		...	Kalidindi channel head-sluice.	760	...	760	760	...	...	
285	Do. ...		...	Drop, 1st mile	675	...	675	675	...	...	
286	Do. ...		...	Bridge, 2nd mile	1,370	...	1,370	1,370	...	...	
287	Do. ...		...	Tail escape	410	...	410	410	...	...	
288	Do. ...		...	Kondangi branch head-sluice.	1,420	...	1,420	1,420	...	...	
289	Do. ...		...	Do. tail escape.	425	...	425	425	...	...	
290	Do. ...		...	Muttagunta channel head-sluice.	1,495	...	1,495	1,495	...	...	
291	Do. ...		...	Do. tail escape.	485	...	485	485	...	...	
292	Do. ...		...	Minor distributaries ten sluices.	4,000	...	4,000	4,000	...	...	Lump sum.
293	Do. ...		4-40′	Dakeru channel head-sluice...	150	...	150	150	...	...	
294	Do. ...		...	Do. tail escape ...	375	...	375	375	...	...	
295	Do. ...		4-63′	Guraza channel head-sluice...	40	...	40	40	...	...	
296	Do. ...		5-20′	Chigurukota channel do. ...	250	232	18	250	...	...	
297	Do. ...		...	Do. bridge, 6th mile.	1,400	...	1,400	1,400	...	...	
298	Do. ...		..	Do. tail escape ...	550	...	550	550	...	...	
299	Do. ...		14-0	Kykalur channel head-sluice.	400	183	217	400	...	...	Do.
300	Do. ...		...	Do. outlet, 6th mile ...	1,100	...	1,100	1,100	...	...	
301	Do. ...		...	Do. bridge, Tumidi road.	1,080	...	1,080	1,080	...	...	
302	Do. ...		...	Do. tail escape	1,345	...	1,345	1,345	...	...	
303	Do. ...		16-77′	Narasayapalem channel head-sluice.	580	1,339	...	1,339	759	...	
304	Do. ...		...	Do. tail escape ...	580	488	92	580	...	...	

305	Do. ..		17-54′	Seetanapalle channel head-sluice.	580	604	...	604	24	...	
306	Do. ...		...	Do. 2nd regulator ...	...	574	...	574	574	...	
307	Do. ...		...	Do. tail escape ...	445	...	445	445	...	...	
308	No. 389 I. of 10th May 1883.		18-41′	Ramaveram channel head-sluice.	623	146	477	623	...	...	
309	Do. ...		...	Do. tail escape ...	685	226	459	685	...	...	
310	Do. ...		...	Tadinada channel head-sluice.	462	...	462	462	...	...	
311	No. 247 I. of 10th March 1885.		...	Do. head-sluice to Rudraveram side channel.	310	34	276	310	...	...	
				Total ...	44,675	4,876	41,706	46,582	1,907	...	
312	Para. 77 of the Note printed in No. 3528 of 22nd Dec. 1876.	(3) L.	...	Ten minor channels	5,000	...	5,000	5,000	...	...	Lump sum.
313	Do. ...		2-70′	Chivurukodu channel ...	45,890	...	45,890	45,890	...	...	Do.
314	Do. ...		...	Kalidindi do.	2,340	...	2,340	2,340	...	...	
315	Do. ...		...	Kondangi do.	3,345	...	3,345	3,345	...	...	
316	Do. ...		...	Muttagunta do.	1,640	...	1,640	1,640	...	...	
317	Do. ...		...	Minor channel	5,000	...	5,000	5,000	...	...	
318	Do. ...		5-20′	Chigurukota channel ...	6,000	2,455	3,545	6,000	...	...	Do.
319	Do. ...		14-0	Kykalur do.	8,450	...	8,450	8,450	...	...	Do.
320	Do. ...		16-77′	Narasayapalem channel ...	3,915	7,537	...	7,537	3,622	...	
321	Do. ...		17-54′	Seetanapalle do. ...	3,350	5,661	...	5,661	2,311	...	Three-fourths work done.
322	No. 389 I. of 10th May 1883.		18-41′	Ramaveram do. ...	4,047	4,184	...	4,184	137	...	Nearly completed.
323	......		...	Tadivada do. ...	2,544	2,751	...	2,751	207	...	
324	No. 247 I. of 10th March 1885.		...	Rudraveram side do. ...	480	344	136	480	...	...	
325	Do. ...		...	Ramavaram channel new head.	...	574	...	574	574	...	
				Total ...	92,001	23,506	75,346	98,852	6,851	...	
326	Para. 77 of the Note printed in No. 3528 of 22nd Dec. 1876.	(3) O.	2-70′	Chivurukodu channel, 17 cattle crossings.	6,930	...	6,930	6,930	...	...	
				Total, (3) Distributaries ...	1,59,809	28,903	1,39,664	1,68,567	8,758	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Polraz canal—*cont.*							
327	Para. 77 of the Note printed in No. 3528 of 22nd Dec. 1876.	(4) B.	...	Upputeru	150	...	150	150	...	...	
328	Do. ...	(4) L.	...	Do. embanking ...	2,710	...	2,710	2,710	...	...	
329	Do. ...		...	Do. do. ...	795	...	795	795	...	...	
				Total ...	3,505	...	3,505	3,505	...	...	
				Total, (4) Drainages and Protective works.	3,655	...	3,655	3,655	...	...	
				Total, Polraz canal ...	3,10,880	1,57,324	1,61,988	3,19,312	8,432	...	
				Bantumilli canal—							
330	No. 30 I. of 13th Jan. 1883.	(2) B.	...	Compensation for land, old claims.	30	...	30	30	...	...	
331	No. 39-A I. of 16th Jan. 1884.		...	Do. do. ...	309	309	...	309	...	...	Completed.
				Total ...	339	309	30	339	...	...	
332	No. 372 I. of 2nd April 1884 and No. 767 I. of 17th Nov. 1886.	(2) D.	...	Supply weir at head, improvements.	785	785	...	785	...	...	Do.
333	No. 30 I. of 13th Jan. 1883.	(2) G.	...	Bridge on Bantumilli road at Pandraka.	6,190	...	6,190	6,190	...	...	Lump sum.
334	Do. ...	(2) H.	15-0	Escape weir at Pandraka ...	3,300	...	3,300	3,300	...	...	} Do.
335	Do. ...		...	Do. at end	3,160	...	3,160	3,160	...	...	
				Total ...	6,460	...	6,460	6,460	...	...	

336	No. 777 I. of 28th Aug. 1884 and No. 767 I. of 17th Nov. 1886.	(2) I.	...	Cowtaram lock improvements.	3,763	3,763	...	3,763	...	...	Completed.
337	No. 310 I. of 10th May 1887.		5-40′	Kamalápuram lock	25,362	18,620	6,742	25,362	...	...	Nearly completed.
338	......		5-40′	Do. weir ...	3,030	2,197	833	3,030	...	...	
339	No. 30 I. of 15th Jan. 1883.		15- 0	Pandraka lock	21,500	...	21,500	21,500	...	...	Lump sum.
340	Do. ...		...	Lock at end	22,830	...	22,830	22,830	...	...	Do.
				Total ..	76,485	24,580	51,905	76,485	...	..	
341	No. 1023 I. of 10th Dec. 1883 and No. 919 I. of 28th Oct. 1885.	(2) K.	...	Cowtaram rest-house ...	2,679	2,679	...	2,679	...	...	Completed.
342	No. 846 I. of 7th Dec. 1886.		...	Do. out-houses	570	...	570	570	...	...	
343	No. 30 I. of 13th Jan. 1883.		...	Chendrala rest-house ...	1,300	...	1,300	1,300	...	...	Lump sum.
				Total ...	4,549	2,679	1,870	4,549	...	...	
344	No. 349 I. of 1st April 1885.	(2) L.	...	Raising banks in first reach ...	3,525	3,440	85	3,525	...	...	Nearly completed.
345	No. 30 I. of 13th Jan. 1883 and No. 349 I. of 1st April 1885.		...	Earthwork in other reaches ...	39,935	2,496	37,439	39,935	...	...	Lump sum.
				Total ...	43,460	5,936	37,524	43,460	...	...	
346	No. 30 I. of 13th Jan. 1883.	(2) O.	...	Cowtaram ramp	280	...	280	280	...	...	Do.
347	Do. ...		...	Daggumalli do.	300	...	300	300	...	...	Do.
348	Do. ...		...	Chevendra do.	420	...	420	420	...	...	Do.
349	Do. ...		...	Nallagunta do.	290	...	290	290	...	...	Do.
350	Do. ...		...	Kalavagunta do.	190	...	190	190	...	...	Do.
351	Do. ...		...	Satulur do.	360	...	360	360	...	...	Do.
352	Do. ...		...	Amudalapalli do.	345	...	345	345	...	...	Do.

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
				Eastern Section—cont. Bantumilli canal—*cont.*	RS.	RS.	RS.	RS.	RS.	RS.	
353	No. 30 I. of 13th Jan. 1883.	(2) O.	...	Kruttivennu ramp	530	...	530	530	...	...	Lump sum.
354	Do. ...		...	Chendrala do.	515	...	515	515	...	...	Do.
				Total ...	3,230	...	3,230	3,280	...	...	
				Total, (2) Main canals and branches.	1,41,498	34,289	1,07,209	1,41,498	...	...	
355	No. 250 I. of 23rd April 1888.	(3) A.	...	Lascars for surveying and levelling.	292	...	292	292	...	...	
356	No. 167 I. of 14th Feb. 1885.	(3) B.	...	Munjulur channel, old claims.	313	308	5	313	...	...	
357	Do. ...		...	Kunchadam irrigation channel, old claims.	97	97	...	97	...	...	Completed.
358	Appendix D printed in No. 181 I. of 28th Feb. 1882.		...	Compensation for land ...	1,535	...	1,535	1,535	...	...	Lump sum.
				Total ...	1,945	405	1,540	1,945	...	...	
359	Do. ...	(3) C.	...	Masonry works	3,837	...	3,837	3,837	...	...	Do.
360	Do. ...	(3) L.	...	Earthwork	9,210	...	9,210	9,210	...	...	Do.
361	Do. ...	(3) O.	...	Cattle-crossings	768	...	768	768	...	...	Do.
				Total, (3) Distributaries ...	16,052	405	15,647	16,052	...	...	
				Total, Bantumilli canal ...	1,57,550	34,694	1,22,856	1,57,550	...	...	

				Ellore canal—							
362	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.	(2) F.	7-16′	Budemeru aqueduct	1,880	...	1,880	1,880	...	...	Lump sum.
363	No. 969 I. of 28th Nov. 1883 and No. 919 I. of 28th Oct. 1885.		10-21′	Kesarapalle do.	40,135	40,135	...	40,135	...	...	Completed.
364	No. 314 I. of 2nd June 1888.		15-60′	Inlet	800	...	800	800	...	...	
365	Do. ...		15-63′	Budharam outlet improvements.	1,200	...	1,200	1,200	...	...	
366	Do. ..		19-10′	Autkur do. do. ...	1,210	...	1,210	1,210	...	...	
367	Do. ...		20-17½′	Pottipad do. do. ...	1,497	...	1,497	1,497	...	...	
368	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		22-20′	Veeravilli outlet	380	...	380	380	...	...	
369	......		0-50	Nellivagu do.	255	...	255	255	...	...	
370	No. 314 I. of 2nd June 1888.		22-53	Inlet improvements	400	...	400	400	...	...	
371	Do. ...		22-70	Outlet	4,800	...	4,800	4,800	...	...	
372	Do. ...		22-70	Inlet	1,900	...	1,900	1,900	...	...	
373	Do. ...		24-60	Inlet improvements	390	...	390	390	...	...	
374	Do. ...		24-60	Narasanapalem outlet improvements.	3,289	...	3,289	3,289	...	...	
375	Do. ...		26-10	Inlet improvements	310	...	310	310	...	...	
376	Do. ...		26-10	Outlet do.	715	...	715	715	...	...	
377	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		27-10	Perikeed outlet	3,820	3,820	...	3,820	...	...	Do.
378	No. 314 I. of 2nd June 1888.		27-69	Inlet	530	...	530	530	...	...	
379	Do. ...		27-69	Outlet improvements ...	615	...	615	615	...	...	
380	Do. ...		30-50	Inlet	345	...	345	345	...	...	
381	Do. ...		30-50	Outlet	4,438	...	4,438	4,438	...	...	
382	Do. ...		31- 0	Inlet	1,065	...	1,065	1,065	...	...	
883	Do. ...		31- 0	Outlet	2,395	...	2,395	2,395	...	...	
384	Do. ..		32-29	Inlet	190	...	190	190	...	...	
385	Do. ...		32-29	Peddapad outlet improvements	205	...	205	205	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont. Ellore canal—*cont.*	RS	RS.	RS.	RS.	RS.	RS.	
386	No. 314 I. of 2nd June 1888.	(2) F.	32-30	Inlet	660	...	660	660	...	...	
387	Do. ...		32-30	Outlet	2,410	...	2,410	2,410	...	...	
388	Do. ...		34-40	Inlet	675	...	675	675	...	...	
389	Do. ...		34-40	Outlet	2,455	...	2,455	2,455	...	...	
390	Do. ..		37-40	West Tamileru aqueduct alterations.	18,840	...	18,840	18,840	...	...	
391	Do. ...		40-20	East Tamileru or Chattaparru outlet remodelling.	7,731	...	7,731	7,731	...	...	
				Total ...	1,05,535	43,955	61,580	1,05,535	...	...	
392	Do. ...	(2) F (1).	12-60	Under-tunnel	2,430	...	2,430	2,430	...	...	
393	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.	(2) I.	...	Kalaparru bridge tow-path ...	430	...	430	430	...	...	
394	Do. ...		...	Ellore do. do. ...	455	...	455	455	...	...	
				Total ...	885	...	885	885	...	...	
395	No. 314 I. of 2nd June 1888.	(2) O.	9-75	Nakkalam cattle-crossing ...	436	...	436	436	...	...	
396	Do. ...		14-70	Budharam do. ...	674	...	674	674	...	...	
397	Do. ...		19-50	Pottipad do. ...	801	...	801	801	...	...	
398	Do. ...		21-20	Ampapuram do. ...	805	...	805	805	...	...	
399	Do. ...		22-73	Kodurpad do. ...	722	...	722	722	...	...	
400	Do. ...		35-50	Wutlur do. ...	827	...	827	827	...	...	
				Total ...	4,265	...	4,265	4,265	...	...	

				Total, (2) Main canals and branches ...	1,13,115	43,955	69,160	1,13,115	...	...	
401	Do. ...	(3) B.	11-70	Kesaripalli channel	200	...	200	200	...	...	Lump sum.
402	Do. ...		14-50	Butumalli do.	600	...	600	600	...	...	
403	Do. ...		17-26	Penukamad do.	900	...	900	900	...	...	
404	Do. ...		20-20	Cherivada do.	500	...	500	500	...	...	
405	Do. ...		21-47	Puttagunta do.	670	...	670	670	...	...	
406	Do. ...		26- 2	Kakulapad do.	550	...	550	550	...	...	
407	Do. ...		27-40	Gogunta do.	800	...	800	800	...	...	
408	No. 635 I. of 9th July 1884		36-20	Mupparru do.	450	120	330	450	...	...	
409	No. 618 I. of 18th July 1885.		...	Budemeru-Mupparru channel.	59	59	...	59	...	...	Completed.
410	No. 644 I. of 18th Sept. 1886.		39-11	Madapalli channel	3,642	...	3,642	3,642	...	...	
411	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Distributaries	1,460	...	1,460	1,460	...	...	Lump sum.
				Total ...	9,831	179	9,652	9,831	...	...	
412	Do ...	(3) C.	11-70	Kesaripalli channel	350	...	350	350	...	...	Do.
413	Do. ...		14-50	Butumalli do.	750	...	750	750	..	...	
414	Do. ...		17-26	Penukamad do.	1,000	...	1,000	1,000	...	...	
415	Do. ...		20-20	Cherivada do.	650	...	650	650	...	...	
416	Do. ...		21-47	Puttagunta do.	850	...	850	850	...	...	
417	Do. ...		26- 2	Kakulapad do.	650	...	650	650	...	..	
418	Do. ...		27-40	Gogunta do. ...	1,000	...	1,000	1,000	...	...	
419	No. 635 I. of 9th July 1884 and No. 919 I. of 28th Oct. 1885.		36-20	Mupparru do. head-sluice	661	661	...	661	...	...	Completed.
420	No. 635 I. of 9th July 1884.		...	Drop 4½ feet	329	329	...	329	...	...	Do.
421	No. 767 I. of 17th Nov. 1886.		...	Do. 3¾ feet	308	308	...	308	...	...	Do.
422	No. 635 I. of 9th July 1884.		...	Minor sluices	390	294	96	390	...	...	Two out of three completed.
423	Do. ...		...	Masonry works	1,775	...	1,775	1,775	...	...	Lump sum.

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Ellore canal—*cont.*							
424	No. 314 I. of 2nd June 1888.	(3) C.	39-11	Madapalli channel head-sluice.	2,970	628	2,342	2,970	...	...	
425	Do. ...		39-43	Madapalli under-tunnel ...	1,234	...	1,234	1,234	...	...	
426	Do. ...		39-54	Do. culvert	1,741	72	1,669	1,741	...	...	
427	Do. ...		39-73	Do. under tunnel ...	1,234	651	583	1,234	...	...	
428	Do. ...		39-76	Do. drop	...	169	—169	...	...	...	
429	Do. ..		39-76	Do. culvert	1,175	97	1,0	1,175	...	...	
430	Do. ...		40-01	Do. drop	511	54	457	511	...	...	
431	Do. ...		41-01	Do. do.	655	132	523	655	...	...	
432	Do. ...		41-41	Do. do.	654	137	517	654	..	...	
433	Do. ...		41-77	Do. do.	700	106	594	700	...	...	
434	Do. ...		43-06	Do. do.	...	125	—125	...	...	...	
435	Do. ...		...	Nine minor sluices at Rs. 150 each	1,350	324	1,026	1,350	...	...	
				Total ...	20,937	4,087	16,850	20,937	...	...	
436	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.	(3) L.	11-70	Kesaripalli channel	650	...	650	650	...	...	Lump sum.
437	Do. ...		14-50	Butamilli do.	2,250	...	2,250	2,250	...	...	Lump sum.
438	Do. ...		17-26	Pamikamad do.	3,500	...	3,500	3,500	...	...	Lump sum.
439	Do. ...		20-20	Cherivada do.	1,930	...	1,930	1,930	...	...	Lump sum.
440	Do. ...		21-47	Puttagunta do.	2,480	...	2,480	2,480	...	...	Lump sum.
441	Do. ...		26- 2	Kakulapad do.	2,000	...	2,000	2,000	...	...	Lump sum.
442	Do. ...		27-40	Gogunta do.	3,000	...	3,000	3,000	...	...	Lump sum.
443	No. 635 I. of 9th July 1884 and No. 659 I. of 25th Oct. 1887.		36-20	Mupparru do.	2,664	2,664	...	2,664	...	...	Completed.

444	No. 314 I. of 2nd June 1888.		39-11 to 43-6	Madapalli do.	4,180	117	4,063	4,180	...	...	
445	No. 644 I. of 18th Sept. 1886.		39-11	Do. side channel ...	570	...	570	570	...	...	
446	Do. ...		39-11	Channel parallel to Ellore canal on left of Madapalli channel.	400	...	400	400	...	...	
447	Do. ...		39-11	Channel parallel to Ellore canal on right of Madapalli channel.	44	...	44	44	...	...	
448	Do. ...		39-54	Side channel right of Madapalli channel from 3,061 feet below head.	43	...	43	43	...	...	
449	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Earthwork	1,096	...	1,096	1,096	...	...	Lump sum.
				Total ...	24,807	2,781	22,026	24,807	...	...	
450	No. 635 I. of 9th July 1884.	(3) O.	...	Mupparru channel cattle-crossing.	192	192	...	192	...	...	Completed.
451	No. 767 I. of 17th Nov. 1886.		...	Do. do. ...	180	180	...	180	...	...	Do.
452	Do. ...		...	Madapalli do. ...	...	394	...	394	394	...	
				Total ...	372	766	...	766	394	...	
				Total, (3) Distributaries ...	55,947	7,813	48,528	56,341	394	...	
453	No. 314 I. of 2nd June 1888.	(4) B.	8-40	Nakkalam drain	160	...	160	160	...	...	
454	Do. ...		10-20	Kasarapalli do.	308	...	308	308	...	...	
455	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		16-0	Avitapalli do.	300	...	300	300	...	...	
456	Do. ...		17-0	Athkur do.	80	...	80	80	...	...	
457	Do. ...		19-0	Potipad do.	50	...	50	50	...	...	
458	No. 314 I. of 2nd June 1888.		...	Ampapuram do.	255	...	255	255	...	...	
459	Do. ...		23-10	Veeravalli do.	80	...	80	80	...	...	
460	Do. ...		25-5	Narasanapalem drain ...	90	...	90	90	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Ellore canal—*cont.*							
461	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.	(4) B.	24-0	Canamole drain	225	...	225	225	...	...	
462	Do. ...		27-0	Perikeed do.	170	...	170	170	...	...	
463	Do. ...		28-0	Rameleru do.	80	...	80	80	...	...	
464	No. 314 I. of 2nd June 1888.		29-70	Totaguden do.	50	...	50	50	...	...	
465	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		31-0	Punnukollu do.	40	...	40	40	...	...	
466	No. 314 I. of 2nd June 1888.		33-40	Peddapad do.	100	...	100	100	...	...	
467	Do. ...		...	East Tamileru flood bank ...	80	...	80	80	...	...	
468	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		35-77	Wuttur do. ...	70	...	70	70	...	...	
469	Do. ...		37-10	West Tamileru do. ...	300	...	300	300	...	...	
470	Do. ..		39-5	Jolipudi do. ..	100	...	100	100	...	...	
				Total ...	2,538	...	2,538	2,538	...	...	
471	No. 314 I. of 2nd June 1888.	(4) L.	8-40	Nakkala drain	425	...	425	425	...	...	
472	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		10-21	Kesarapalli do.	300	...	300	300	...	...	
473	Do. ...		16-0	Avitapalli do.	400	...	400	400	...	...	
474	Do. ...		17-0	Athkur do.	490	...	490	490	...	...	
475	Do. ...		19-0	Potipad do.	150	...	150	150	...	...	
476	No. 314 I. of 2nd June 1888.		21-20	Ampapuram do.	3,187	...	3,187	3,187	...	...	

477	Do. ...		23-10	Veeravalli do.	1,896	...	1,896	1,896	...	...	
478	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		22-50	Nellivagu do.	830	...	830	830	. .	...	
479	No. 314 I. of 2nd June 1888.		25.5	Narasanapalem drain ...	856	...	856	856	...	...	
480	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		24-0	Canamole drain	1,465	...	1,465	1,465	...	...	
481	Do. ...		27-0	Perikeed do.	300	...	300	300	...	...	
482	Do. ...		28-0	Ramileru do.	60	...	60	60	...	...	
483	No. 314 I. of 2nd June 1888.		29-70	Totaguden do.	535	...	535	535	...	...	
484	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		31-0	Punnukollu do.	20	...	20	20	...	...	
485	No. 314 I. of 2nd June 1888.		33-40	Peddapad do.	2,020	...	2,020	2,020	...	...	
486	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		35-77	Wuttur do.	300	...	300	300	...	...	
487	Do. ...		37-10	West Tamileru drain ...	2,500	...	2,500	2,500	...	...	Lump sum.
488	Do. ...		39-5	Jolipudi drain	300	...	300	300	...	...	
489	Do. ...		...	East Tamileru drain	2,165		2,165	2,165	...	...	Do.
490	No. 390 I. of 13th May 1882 and No. 767 I. of 17th Nov. 1886.		...	Budemeru artificial cut to carry along the north side of the Ellore canal ...	15,845	15,845	...	15,845	...	...	Completed.
491	No 644 I. of 18th Sept. 1886.		39-62	Drain from Rhani kalva where drain tails into Therdla and Duggiralavari kalva.	36	...	36	36	...	...	
				Total ..	34,080	15,845	18,235	34,080	...	...	
492	Para. 50 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Minor improvements to old masonry works.	10,120	...	10,120	10,120	..	...	Lump sum.
				Total ...	10,120	...	10,120	10,120	...	...	
				Total, (4) Drainages and Protective works.	46,738	15,845	30,893	46,738	...	...	
				Total, Ellore canal ..	2,15,800	67,613	1,48,581	2,16,194	394	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. De-crease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Ryves' canal—							
493	No. 799 I. of 9th Oct. 1882.	(2) B.	...	Compensation for land ...	6,402	6,287	115	6,402	...	...	
494	No. 371 I. of 5th May 1883.		...	Old claims	86	62	24	86	...	...	
495	No. 631 I. of 7th July 1884.		...	Do.	698	418	280	698	...	...	
496	No. 39 I. of 16th Jan. 1884.		...	Do.	1,769	1,764	5	1,769	...	...	
497	No. 908 I. of 9th Oct. 1884.		...	Do.	135	130	5	135	...	...	
498	No. 1007 I. of 27th Nov. 1885.		...	Do.	341	341	...	341	...	...	Completed.
499	No. 754 I. of 15th Nov. 1886.		...	Do.	919	919	...	919	...	...	Do.
				Total ...	10,350	9,921	429	10,350	...	...	
500	No. 799 I. of 9th Oct. 1882.	(2) D.	...	Head-sluice and bridge ...	19,260	19,260	...	19,260	...	...	Do.
501	Do. ...		...	Fender-piles in front of bridge.	1,624	1,281	343	1,624	...	...	
				Total ...	20,884	20,541	343	20,884	...	...	
502	Do. ...	(2) E.	...	Komatigunta calingulah ...	5,816	5,815	...	5,815	..	1	Do.
503	No. 96 I. of 29th Jan. 1884 and No. 919 I. of 28th Oct. 1885.	(2) F 1	2-50	Inlet right bank	546	546	...	546	...	...	Do.
504	Do. ...		3-20	Do.	460	460	...	460	...	...	Do.
505	Do. ...		4-70	Do.	440	440	...	440	...	...	Do.

506	Do. ...		6-35	Do.	448	448	...	448	...	...	Do.
507	Do. ...		7-10	Do.	498	498	...	498	...	...	Do.
508	Do. ...		7-50	Inlet left bank	330	330	...	330	...	...	Do.
509	Do. ...		14-0	Inlet right bank	626	626	...	626	...	...	Do.
510	No. 96 I. of 29th Jan. 1884 and No. 694 I. of 11th Aug. 1885.		15-60	Do.	909	909	...	909	...	...	Do.
511	No. 96 I. of 29th Jan. 1884 and No 919 I. of 28th Oct. 1885.		16-5	Do.	665	665	...	665	...	...	Do.
512	No. 96 I. of 29th Jan. 1884 and No. 694 I. of 11th Aug. 1885.		17-10	Do.	677	677	...	677	...	...	Do.
				Total ...	5,599	5,599	..	5,599	...	...	
513	No. 799 I. of 9th Oct. 1882.	(2) G.	7-40	Bridge on Ellore road ...	12,979	12,979	...	12,979	...	...	Do.
514	No. 799 I. of 9th Oct. 1882 and No. 659 I. of 25th Oct. 1887.		17-10	Do. at Kunderu	7,477	7,477	...	7,477	...	...	Do.
515	No. 799 I. of 9th Oct. 1882.		19-15	Do. at Kadavakollu ...	7,723	6,105	1,618	7,723	...	...	
516	Do. ...		22-60	Value of materials collected for Marrivada bridge but destroyed.	2,434	2,434	...	2,434	...	...	Do.
				Total ...	30,613	28,995	1,618	30,613	...	...	
517	Do. ...	(2) K.	...	Gudiváda rest-house ...	2,853	2,853	...	2,853	...	...	Do.
518	No. 799 I. of 9th Oct. 1882 and No 919 I. of 28th Oct. 1885.	(2) L.	...	New cut	2,82,072	2,82,072	...	2,82,072	...	...	Do.
519	No. 799 I. of 9th Oct. 1882.		...	Widening from 6-7 to 22-60.	99,500	92,114	7,386	99,500	...	...	1st and 2nd reaches completed; 3rd in progress.
				Total ...	3,81,572	3,74,186	7,386	3,81,572	...	...	
520	No. 312 I. of 26th March 1885 and No. 767 I. of 17th Nov. 1886.	(2) O.	1-7	Cattle-crossing at Mogalrazapuram.	294	294	...	294	...	...	Completed.

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont. Ryves' canal—*cont.*	RS.	RS.	RS.	RS.	RS.	RS.	
521	No. 312 I. of 26th March 1385 and No. 767 I. of 17th Nov. 1886.	(2) O.	2-6	Cattle-crossing at Machaveram	284	284	...	284	...	...	Completed.
522	Do. ...		4-6	Do. at Ramavarapad	272	272	...	272	...	...	Do.
523	Do. ...		6-2	Do. at Yenikapad ...	353	353	...	353	...	...	Do.
524	No 312 I. of 26th March 1885 and No. 659 I. of 25th Oct. 1887.		9-8	Do. at Velpur ...	438	438	...	438	...	...	Do.
				Total ...	1,641	1,641	...	1,641	...	...	
				Total, (2) Main canals and Branches.	4,59,328	4,49,551	9,776	4,59,327	...	1	
525	No. 799 I. of 9th Oct. 1882.	(3) B.	...	Gudiváda channel	14	...	14	14	...	...	
526	No. 371 I. of 5th May 1883.		...	Old claims	251	246	5	251	...	...	
527	No. 39 I. of 16th Jan. 1884.		...	Do.	724	723	1	724	...	...	
528	No. 1007 I. of 27th Nov. 1885.		...	Do.	135	135	...	135	...	...	Do.
529	No. 145 I. of 12th Feb. 1885.		...	Komatigunta channel ...	1,200	309	891	1,200	...	...	Partly paid.
530	Do. ...		...	Dosapad do. ...	6,960	3,525	3,435	6,960	...	...	
531	Do. ...		...	North-side channel of Dosapad channel.	600	744	...	744	144	...	Completed.
532	Do. ...		...	Neharelli Codu of Dosapad channel.	1,950	561	1,389	1,950	...	...	
533	No. 354 I. of 11th May 1886.		...	Juvanapudi branch of Konderu channel.	825	...	825	825	...	...	
534	Do. ...		...	Kalavapamula branch of Konderu channel.	500	19	481	500	...	...	
				Total ...	13,159	6,262	7,041	13,30[illegible]	144	...	

535	No. 799 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.	(3) C.	...	Gudiváda channel head-sluice screw-gearing shutters.	238	238	...	238	...	...	Completed.
536	No. 799 of 9th Oct. 1882.		...	Accommodation bridge ...	1,593	1,593	...	1,593	...	...	Do.
537	Do. ...		...	Do. ...	1,593	1,593	...	1,593	...	...	Do.
538	Do. ...		...	Value of materials collected for calingulah and bridge and lost by deterioration.	445	445	...	445	...	...	Do.
539	No. 799 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		...	Velpur channel sluice ...	291	291	...	291	...	...	Do.
540	No. 145 I. of 12th Feb. 1885.		...	Komatigunta channel head-sluice.	750	722	28	750	...	...	Almost completed.
				Dosapad channel and its branches—							
541	Do. ...		...	Improvements to head-sluice, Komatigunta.	2,200	2,050	150	2,200	...	...	Do.
542	Do. ...		5-30	Drop	1,440	1,448	...	1,448	8	...	
543	No. 145 I. of 12th Feb. 1885 and No. 659 I. of 25th Oct. 1887.		...	Improvements to Ventrapragada bridge.	627	627	...	627	...	...	Completed.
544	No. 145 I. of 12th Feb. 1885.		10-32	Drop	1,230	1,269	...	1,269	39	...	Nearly completed.
545	Do. ...		13-9	Drop bridge	3,160	2,812	348	3,160	...	...	Do.
546	Do. ...		14-61	Drop	1,015	611	404	1,015	...	...	Half of work done.
547	Do. ...		...	Twelve small sluices at Rs. 380 each.	4,560	221	4,339	4,560	...	...	
548	Do. ...		...	Escape below Ventrapragada bridge.	1,610	1,513	97	1,610	...	...	Nearly completed.
549	Do. ...		...	Idupalli channel head-sluice	780	509	271	780	...	...	
550	Do. ...		...	Mustaphakhan Codu head-sluice improvements.	305	151	154	305	...	...	
551	Do. ...		...	North-side channel head-sluice.	970	911	59	970	...	...	
552	Do. ...		...	Singaveram channel head-sluice (branch of north-side channel).	405	51	354	405	...	...	
553	Do. ...		...	Neharelli Codu head-sluice ...	940	679	261	940	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate: Expenditure incurred to end of 1887-88.	Revised Estimate: Further expenditure.	Revised Estimate: Total.	Difference: Increase.	Difference: Decrease.	Remark.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Ryves' canal—*cont.*							
554	No. 462 I. of 7th Aug. 1888.	(3) C.	20-2	Sayapuram channel head-sluice.	480	...	480	480	...	...	
				Kunderu channel and its branches—							
555	No. 799 I. of 9th Oct. 1882 and No. 659 I. of 25th Oct. 1887.		...	Head-sluice	938	938	...	938	...	...	Completed.
556	No. 354 I. of 11th May 1886.		...	Bridge at 3rd mile ...	1,560	355	1,205	1,560	...	...	
557	Do. ...		...	Drop at 6th mile ...	620	166	454	620	...	...	
558	Do. ...		8-10	Road dam on Mudunúr road.	585	256	329	585	...	...	
559	Do. ...		...	Juvanapudi branch head-sluice.	825	...	825	825	...	...	
560	Do. ...		1-20	Road dam	433	...	433	433	...	...	
561	Do. ...		...	Drop at 3rd mile ..	415	...	415	415	...	...	
562	Do. ...		...	Kalavapamula branch head-sluice.	468	...	468	468	...	...	
563	Do. ...		...	Masonry works	5,196	...	5,196	5,196	...	...	Lump sum.
				Total ...	35,672	19,449	16,270	35,719	47	...	
564	No. 799 I. of 9th Oct. 1882.	(3) L.	...	Gudiváda channel enlarging and improving.	2,423	2,423	...	2,423	...	...	Completed.
565	Do. ...		...	Minor channels	118	...	118	118	...	...	
566	No. 145 I. of 12th Feb. 1885.		...	Komatigunta channel excavating.	3,870	3,006	864	3,870	...	...	Half of work done.
567	Do. ...		...	Dósapad channel widening and extension.	30,120	26,792	3,328	30,120	...	...	Do.
568	Do. ...		...	North-side channel excavating.	2,130	1,190	940	2,130	...	...	
569	Do. ...		...	Neharelli Codu excavating ...	5,500	4,115	1,385	5,500	...	...	Do.

570	No. 354 I. of 11th May 1886.		...	Kunderu channel improving.	5,527	3,270	2,257	5,527	...	...	Three-fourths of work done.
571	Do. ...		...	Juvanapudi branch channel excavating.	2,920	1,437	1,483	2,920	...	...	
572	Do. ...		...	Kalavapamula branch channel excavating.	2,010	1,570	440	2,010	...	...	
573	Do. ...		...	Earthwork	10,490	132	10,358	10,490	...	...	Lump sum.
				Total ...	65,108	43,935	21,173	65,108	...	...	
				Dosapad channel—							
574	No. 145 I. of 12th Feb. 1885.	(3) O.	...	Manikonda ramp ...	306	177	129	306	...	...	
575	Do. ...		...	Katur do.	326	207	119	326	...	...	
576	Do. ...		...	Kalavapamula do.	341	281	60	341	...	...	
577	Do. ...		...	Ventrapragada do.	374	297	77	374	...	...	
578	Do. ...		...	Kornipad do.	452	179	273	452	...	...	
579	Do. ...		...	Pamulapad do.	442	102	340	442	...	...	
580	Do. ...		...	Dosapad do.	402	104	298	402	...	...	
581	Do. ...		...	Nandivada do.	349	84	265	349	...	...	
582	Do. ...		...	Tummalapalem and Malagudem ramp.	349	97	252	349	...	...	
583	Do. ...		...	Vennanapudi ramp ...	279	81	198	279	...	...	
584	Do. ...		...	Kadavakollu do.	275	81	194	275	...	...	
585	Do. ...		...	Ilaparru do.	235	73	162	235	...	...	
586	Do. ...		...	North-side channel cattle ramps at Mallapalle.	530	382	148	530	...	...	
				Kunderu channel—							
587	No. 354 I. of 11th May 1886.		...	Cattle ramp at Katuru ...	197	...	197	197	...	...	
				Total ...	4,857	2,145	2,712	4,857	...	...	
				Total, (3) Distributaries ...	1,18,796	71,791	47,196	1,18,987	191	...	
588	No. 799 I. of 9th Oct. 1882.	(4) B.	...	Compensation for land for catch drain along the bank of the canal from $17\frac{1}{2}$ miles to Chendrayakodu under-tunnel.	457	...	457	457	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further Expenditure.	Total.	Increase.	De-crease.	
					RS.	RS.	RS.	RS.	RS.	RS.	
				Eastern Section—cont.							
				Ryves' canal—*cont.*							
589	No. 799 I. of 9th Oct. 1882.	(4) C.	19-15	Culvert for catch drain along the bank of the canal from 17½ miles to Chendrayakodu under-tunnel.	721	...	721	721	...	...	
590	Do. ...	(4) L.	...	Catch drain from 14-70 to 15-60.	227	...	227	227	...	...	
591	Do. ...		...	Catch drain from 17-20 to 21-0.	944	...	944	994	...	...	
				Total ...	1,171	...	1,171	1,171	...	...	
				Total, (4) Drainages and Protective works.	2,349	...	2,349	2,349	...	...	
				Total, Ryves' canal ...	5,80,473	5,21,342	58,841	5,80,183	190	...	
				Bank canal—							
592	No. 1057 I. of 25th Nov. 1884.	(2) B.	...	Compensation for land ...	1,257	...	1,257	1,257	...	...	
593	No. 242 I. of 7th March 1885.		...	Do.	4,745	4,744	1	4,745	...	...	Completed.
594	No. 617 I. of 18th July 1885.		...	Do.	1,615	1,615	...	1,615	...	...	Do.
595	No. 1007 I. of 27th Nov. 1885.		...	Old claims	245	245	...	245	...	...	Do.

596	No. 754 I. of 15th Nov. 1886.		...	Do.	12	12	...	12	...	...	Do.
597	Para. 12 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Compensation for land ...	2,383	136	2,247	2,383	..	...	Lump sum.
				Total ...	10,257	6,752	3,505	10,257	...	...	
598	Do. ...	(2) D.	...	Head-sluice	6,940	...	6,940	6,940	...	...	
599	Do. ...	(2) F.	35-40	Puligedda aqueduct	3,58,500	...	3,58,500	3,58,500	...	...	
600	Do. ...	(2) F1	...	Inlets above 11th mile ...	6,650	...	6,650	6,650	...	...	
601	Do. ...	(2) G.	7-38	Royur bridge	7,100	...	7,100	7,100	...	...	
602	Do. ...		12-47	Vallúr do.	7,380	...	7,380	7,380	...	...	
603	Do. ...		19-2	Ilur do.	7,300	...	7,300	7,300	...	...	
604	Do. ...		23-77	Srikakulam bridge	7,570	...	7,570	7,570	...	...	
605	Do. ...		25-0	Papanásam do.	7,480	...	7,480	7,480	...	..	
606	Do. ...		35-51	Kottrapalem do.	7,820	...	7,820	7,820	...	...	
				Total ...	44,650	...	44,650	44,650	..	...	
607	Do. ...	(2) H.	16-0	Escape weir left bank ...	2,815	...	2,815	2,815	...	...	
608	Do. ...		34-15	Do. right bank ...	3,015	...	3,015	3,015	...	...	
				Total ...	5,830	...	5,830	5,830	...	...	
609	No. 519 I. of 1st Sept. 1888.	(2) I.	...	Head lock	17,195	...	17,195	17,195	...	...	
610	Para. 12 of the Note printed in No. 3528 of 22nd Dec. 1876.	(2) K.	19-3	Aylur rest-house	2,960	...	2,960	2,960	...	...	
611	Do. ...		35-0	Aqueduct do.	3,100	...	3,100	3,100	...	...	
612	Do. ...		37-58	Avanigedda do.	1,200	...	1,200	1,200	...	..	Lump sum.
613	Do. ...		...	Kódúr do.	1,200	...	1,200	1,200	...	...	Do.
				Total ...	8,460	...	8,460	8,460	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further Expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Bank canal—*cont.*							
614	Para. 12 of the Note in No. 3528 of 22nd Dec. 1876.	(2) L.	...	Excavation from 0 to 19-2...	2,20,510						
615	Do. ...		...	Do. 19-2 to 34-7...	71,740	15,571	3,19,984	3,35,555	...	...	
616	Do. ...		...	Do. 34-7 to 37-58...	18,530						
617	Do. ...		...	Huts	10,000						Lump sum.
618	Do. ...		...	Unforeseen expenses	14,775						Do.
				Total ...	3,35,555	15,571	3,19,984	3,35,555	...	...	
619	No. 250 I. of 10th March 1885.	(2) O.	...	Bench-mark stones	87	87	...	87	...	...	Completed.
620	Do.		...	Do.	303	...	303	303	...	...	Lump sum.
621	Para. 12 of the Note printed in No. 3528 of 22nd Dec. 1876.		...	Sixteen cattle-crossings ...	9,275	...	9,275	9,275	...	...	
				Total ...	9,665	87	9,578	9,665	...	...	
622	Do. ...	(2) P.	...	Maintenance	32,000	...	32,000	32,000	...	...	Do.
				Total, (2) Main canals and branches.	8,35,702	22,410	8,13,292	8,35,702	...	...	
623	Do. ...	(3) B.	19-28	Kuderu channel	200	...	200	200	...	...	Do.
624	Do. ...		21-58	Lankapalli do.	200	...	200	200	...	...	
625	Do. ...		23-77	Srikakulam do.	600	...	600	600	...	...	
626	Do. ...		26-77	Chittur do.	600	...	600	600	...	...	
627	Do. ...		28-48	Vakalagedda do.	500	...	500	500	...	...	
628	Do. ...		30-68	Pagole do.	500	...	500	500	...	...	
629	Do. ...		33-29	Pedaprole do.	600	...	600	600	...	...	

630	Do. ...		34-7	Wadapalem do.	3,000	...	3,000	3,000	...	...	
631	Do. ...		...	6-20 Nalakarru do.	400	...	400	400	...	..	
632	Do. ...		...	8-3 Yadara do.	450	...	450	450	...	...	
633	Do. ...		37-58	Divi west do	3,005	...	3,005	3,005	...	...	
634	Do. ...		...	2-17 Bundalicheruvu channel.	305	...	305	305	...	...	
635	Do. ..		...	3-15 Vakanúr do. ...	600	...	600	600	...	...	
636	Do. ...		..	5-59 Chodavaram do. ...	900	...	900	900	...	...	
637	Do. ...		...	8-78 Talagada Divi do. ..	820	...	820	820	...	...	
638	Do. ...		...	10-68 Yetimoga do. ...	270	...	270	270	...	...	
639	Do. ...		37-58	Divi north do. ...	3,407	...	3,407	3,407	...	...	
640	Do. ...		...	2-40 Machaveram do. ..	300	...	300	300	...	...	Lump sum.
641	Do. ...		...	4-77 Kaladindivari branch channel.	640	...	640	640	...	...	
642	Do. ...		...	7-0 Kódúr branch channel.	800	...	800	800	...	...	
643	Do. ...		37-58	Swarnamuki do. ...	2,020	...	2,020	2,020	...	...	
644	Do. ...		...	6-0 Mandapakala do. ..	500	...	500	500	...	...	Do.
645	Do. ...		...	8-0 Pedagolapalem do. ...	200	...	200	200	...	...	Do.
646	Do. ...		...	8-0 Golapalem do ...	200	...	200	200	...	...	Do.
				Total ...	21,017	...	21,017	21,017	.	...	
				Kódúr channel—							
647	Do. ...	(3) C.	19-28	Head-sluice	350	...	350	350	...	...	
648	Do. ...		...	Fall at 1-0	300	...	300	300	...	...	
649	Do. ...		...	Tail escape at 1-75 ...	300	...	300	300	...	...	
				Lankapalli channel—							
650	Do. ...		21-58	Head-sluice	400	...	400	400	...	...	
651	Do. ...		...	Fall at 1-0	300	...	300	300	...	...	
652	Do. ...		...	Tail escape at 2-15 ...	400	...	400	400	...	...	
				Srikakulam channel—							
653	Do. ...		23-77	Head-sluice	500	...	500	500	...	...	Do.
654	Do. ...		...	Fall at 1-0	300	...	300	300	...	...	
655	Do. ...		...	Fall at 3-0	300	...	300	300	...	...	
656	Do. ...		...	Tail escape at 5-40 ...	600	...	600	600	...	...	
				Chittur channel—							
657	Do. ...		26-77	Head-sluice	600	...	600	600	...	...	
658	Do. ...		...	Fall at 3-0	300	...	300	300	...	...	
659	Do. ...		...	Fall at 5-0	300	...	300	300	...	...	
660	Do. ...		...	Tail escape at 6-70 ..	360	...	360	360	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Bank canal—*cont.*							
				Vakalagedda channel—							
661	Para. 12 of the Note printed in 3528 of 22nd Dec. 1876.	(3) C.	28-48	Head-sluice	600	...	600	600	...	...	Lump sum.
662	Do. ...		...	Tail escape at 4-20 ...	500	...	500	500	...	...	
				Pagole channel—							
663	Do. ...		30-68	Head-sluice	500	...	500	500	...	...	
664	Do. ...		...	Fall and bridge at 2-0 ..	300	...	300	300	...	...	
665	Do. ...		...	Bridge at 2-60	300	...	300	300	...	...	
666	Do. ...		...	Tail escape at 6-6	300	...	300	300	...	...	
				Pedaprole channel—							
667	Do. ...		32-29	Head-sluice	500	..	500	500	...	...	
668	Do. ...		...	Bridge at 1-20	350	...	350	350	...	...	
669	Do. ...		...	Tail escape at 6-18 ...	450	...	450	450	...	...	
				Wadapalem channel—							
670	Do. ...		34-7	Head-sluice	2,000	...	2,000	2,000	...	...	
671	Do. ...		...	Bridge at Mopidivi and fall ...	2,500	...	2,500	2,500	...	...	
672	Do. ...		...	Do. at Pedakalipalli ...	2,300	...	2,300	2,300	...	...	
673	Do. ...		...	Do. at Yadara	800	...	800	800	...	...	
				6-26 Nelakurru channel—							
674	Do. ...		...	Head-sluice.	450	...	450	450	...	..	
				8-3 at Yadara—							
675	Do. ...		...	Head sluice	400	...	400	400	...	...	
				Divi west channel—							
676	Do. ...		37-58	Head-sluice	3,500	...	3,500	3,500	...	...	
677	Do. ...		...	3-19 Bridge(Vakanur) ...	2,730	...	2,730	2,730	...	...	
678	Do. ...		...	5-59 Do. (Nagailunka)...	1,855	...	1,855	1,855	...	...	
679	Do. ...		...	9-6 Do. (Kolapalem) ...	1,215	...	1,215	1,215	...	...	
680	Do. ...		...	11-47 Do. (Yetimoga) ...	895	...	895	895	...	...	
681	Do. ...		...	13-72 Tail escape ...	250	...	250	250	...	...	Do.
				2-17Bundalicheruvu channel—							

682	Do.	...		...	Head-sluice	515	...	515	515	...	...	
683	Do.	...		...	Tail escape	380	...	380	380	...	...	
					3-15 Vakanur channel—							
684	Do.	..		...	Head-sluice	615	...	615	615	...	...	
685	Do	...		...	Fall, 2nd mile	390	...	390	390	...	...	
686	Do.	...		...	Tail escape	330	...	330	330	...	...	
					5-59 Chodavaram channel—							
687	Do.	...		...	Head-sluice	535	...	535	535	...	...	
688	Do.	...		...	Fall, 3 miles	360	...	360	360	...	...	
689	Do.	...		...	Tail escape, 6 miles	475	...	475	475	...	...	
					8-78 Talagada Divi channel—							
690	Do.	...		...	Head-sluice	770	...	770	770	...	...	
691	Do.	...		...	Tail escape at 5-10	340	...	340	340	...	...	
692	Do.	...		...	10-68 Yetunoga channel, head-sluice.	445	...	445	445	...	...	
					Divi, North channel—							
693	Do.	...		37-58	Head-sluice	2,800	...	2,800	2,800	...	...	Lump sum.
694	Do.	...		...	2-40 Bridge (Machaveram).	1,845	...	1,845	1,845	...	...	
695	Do.	...		...	9-20 Do. (Salempolem).	900	...	900	900	...	...	Do.
696	Do.	...		...	12-50 Do. (Haripuram) ...	900	...	900	900	...	...	Do.
					2-40 Machaveram channel—							
697	Do.	...		...	Head-sluice	400	...	400	400	...	...	Do.
698	Do.	...		...	Tail escape at 2-30	330	...	330	330	...	...	
					4-77 Kalidindivari channel—							
699	Do.	...		...	Head-sluice	750	...	750	750	...	...	
700	Do.	...		...	Tail escape at 4-0	475	...	475	475	...	...	
					7-0 Kodur channel—							
701	Do.	...		...	Head-sluice	765	...	765	765	...	...	
702	Do.	...		...	Tail escape at 5-0	340	...	340	340	...	...	
					Swarnamukhi channel—							
703	Do.	...		37-58	Head-sluice	1,200	...	1,200	1,200	...	...	Do.
704	Do.	...		...	1-20 Fall and bridge ...	1,485	...	1,485	1,485	...	...	
705	Do.	...		...	6-30 Bridge and regulator ...	1,210	...	1,210	1,210	...	...	
706	Do.	...		...	8-0 Dividing sluice and bridge.	1,600	...	1,600	1,600	...	...	
					6-0 Mandapakala channel—							
707	Do.	...		...	Head-sluice	425	...	425	425	...	...	Do.
					Total ...	48,585	...	48,585	48,585	...	...	
708	Do.	...	(3) L.	19-28	Kuduru channel	450	...	450	450	...	...	Do.
	Do.	..		21-58	Lankapalli channel	700	...	700	700	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. De-crease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Bank canal—*cont.*							
710	Para. 12 of the note printed in No. 3528 of 22nd Dec. 1876.	(3) L.	23-77	Srikakulam channel	1,300	...	1,300	1,300	...	...	
711	Do. ...		26-77	Chittur channel	1,400	...	1,400	1,400	...	...	Lump sum. (710–712)
712	Do. ...		28-48	Vakalagedda channel ...	1,200	...	1,200	1,200	...	...	
713	Do. ...		30-68	Pagole channel	600	...	600	600	...	...	
714	Do. ...		33-29	Pedaprole channel	1,500	...	1,500	1,500	...	...	
715	Do. ...		34-7	Wadapolem channel	12,600	...	12,600	12,600	...	...	Do. (713–717)
716	Do. ...		...	6-26 Nelakarru channel ...	1,000	...	1,000	1,000	...	...	
717	Do. ...		...	8-3 at Yadaru	1,700	...	1,700	1,700	...	...	
718	Do. ...	37-58	...	Divi, west channel ..	29,080	...	29,080	29,080	...	...	
719	Do. ...		...	2-17 Bundalicheruvu channel.	1,460	...	1,460	1,460	...	...	
720	Do. ...		...	3-15 Vekanur channel ...	3,260	...	3,260	3,260	...	...	
721	Do. ...		...	5-59 Chodavaram channel ...	4,855	...	4,855	4,855	...	...	
722	Do. ...		...	8-78 Talagada Divi channel ...	5,290	...	5,290	5,290	...	...	
723	Do. ...		...	10-68 Yetimoga channel ...	2,020	...	2,020	2,020	...	...	
724	Do. ...	37-58	...	Divi, north channel	25,000	...	25,000	25,000	...	...	Do.
725	Do. ...		...	2-40 Machaveram channel ...	1,700	...	1,700	1,700	...	...	Do.
726	Do. ...	(3) L.	...	4-77 Kalidindivari channel ...	3,000	...	3,000	3,000	...	...	
727	Do. ...		...	7-0 Kodur channel ...	4,000	...	4,000	4,000	...	...	
728	Do. ...		37-58	Swarnamukhi channel ...	10,000	...	10,000	10,000	...	...	
729	Do. ...		...	6-0 Mundapakala channel ...	2,000	...	2,000	2,000	...	...	Do. (726–731)
730	Do. ...		...	8-0 Pedagollapalem channel ..	1,250	...	1,250	1,250	...	...	
731	Do. ...		...	8-0 Gollapalem channel ...	1,250	...	1,250	1,250	...	...	
				Total ..	1,16,615	...	1,16,615	1,16,615	..	...	
				Total, (3) Distributaries ...	1,86,217	...	1,86,217	1,86,217	...	...	
				Total, Bank canal ...	10,21,919	22,410	9,99,509	10,21,919	...	..	

				1st Sub-section— Drain along the left bank of Masulipatam canal—							
732	No. 649 I. of 21st Sept. 1886.	(4) B.	...	Compensation	607	607	...	607	...	...	Completed.
733	No. 422 I. of 29th May 1883, and No. 659 I. of 25th Oct. 1887.	(4) L	...	Excavation	931	931	...	931	...	...	Do
734	No. 422 I. of 29th May 1883.	(4) O.	...	Miscellaneous works ...	58	54	4	58	...	...	
				Total, Drain along the left bank of Masulipatam canal.	1,596	1,592	4	1,596	...	...	
				Kanakala drain—							
735	Para. 6 of No. 3528 of 22nd Dec 1876.	(4) B.	...	Compensation for land ...	1,908	...	1,908	1,908	...	...	Lump sum.
736	Do. ...	(4) C.	...	Masonry works	2,725	...	2,725	2,725	...	...	Do.
737	Do. ...	(4) L.	...	Earthwork	14,687	...	14,687	14,687	...	...	Do.
				Total, Kanakala drain ...	19,320	...	19,320	19,320	...	...	
				Devarapalli drain—							
738	Do. ...	(4) L.	...	Earthwork	333	...	333	333	...	...	Do.
				Taleru (Divi) drain—							
739	Do. ...	(4) B.	...	Compensation for land ...	1,333	...	1,333	1,333	...	...	Do.
13 740	Do. ...	(4) C.	...	Masonry works	2,500	...	2,500	2,500	...	...	Do.
741	Do. ...	(4) L.	...	Earthwork	16,667	...	16,667	16,667	...	...	Do.
				Total, Taleru (Divi) drain.	20,500	...	20,500	20,500	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
					RS.	RS.	RS.	RS.	RS.	RS.	
				Eastern Section—cont.							
				1st Sub-section—*cont.*							
				Gudimotu drain—							
742	Para. 6 of No. 3528 of 22nd Dec. 1876.	(4) B.	...	Compensation for land ...	667	...	667	667	...	...	Lump sum.
743	Do. ...	(4) C.	...	Masonry works	3,166	...	3,166	3,166	...	...	Do.
744	Do. ...	(4) L.	...	Earthwork	4,500	...	4,500	4,500	...	...	Do.
				Total, Gudimotu drain ...	8,333	...	8,333	8,333	...	...	
				Mopidevi drain—							
745	Do, ...	(4) L.	...	Earthwork	167	...	167	167	...	...	Do.
				Sivaganga drain—							
746	No. 542 I. of 10th July 1883.	(4) B.	...	Compensation for land ...	211	211	...	211	...	...	Completed.
				Drain from Inampudi aqueduct to Dayapucalva—							
747	No. 962 I. of 14th Nov. 1885.	(4) B.	...	Compensation for land ...	5,710	...	5,710	5,710	...	...	
748	Do. ...	(4) L.	...	Excavation	51,610	15,617	35,993	51,610	...	...	Nearly one-third finished.
				Total ...	57,320	15,617	41,703	57,320	...	...	
				3rd Sub-section—							
				Uppuluru drain—							
749	No. 272 I. of 29th Mar. 1883, No. 944 I. of 6th Nov. 1885, and No. 767 I. of 17th Nov. 1886.	(4) B.	...	Compensation for land ...	1,033	1,033	...	1,033	...	...	Completed.

750	Appendix D. of No. 181 I. of 28th Feb. 1882, and No. 962 I. of 14th Nov. 1885.	(4) C.	...	Masonry works	6,717	...	6,717	6,717	...	...	Lump sum.
751	No. 272 I. of 29th Mar. 1883, and No. 659 I. of 25th Oct. 1887.	(4) L.	...	Earthwork	8,499	8,499	...	8,499	...	...	Completed.
752	Appendix D. of No. 181 I. of 28th Feb. 1882, and No. 962 I. of 14th Nov. 1885.	Do.	...	Do.	4,469	...	4,469	4,469	...	...	Lump sum.
				Total ...	12,968	8,499	4,469	12,968	...	...	
753	Appendix D. of No. 181 I. of 28th Feb. 1882.	(4) O.	...	Miscellaneous works ...	261	...	261	261	...	...	Do.
				Total Uppuluru Drain ...	20,979	9,532	11,447	20,979	...	...	
754	No. 369 A.I. of 4th May 1883.	(4) B.	...	Chendroyakodu drain—Compensation for land ...	19,740	4,269	15,471	19,740	...	...	
755	No. 698 I. of 20th Oct. 1886.	(4) C.	12-50	Bridge on Argole road ...	8,355	7,957	398	8,355	...	...	Nearly completed.
756	No. 142 I. of 8th Feb. 1884.	Do.	...	Culvert under Ryves' canal.	10,950	10,708	242	10,950	...	...	
757	Appendix D. of No. 181 I. of 28th Feb. 1882, and No. 962 I. of 14th Nov. 1885.	Do.	...	Masonry works	4,500	...	4,500	4,500	...	...	Lump sum.
				Total ...	23,805	18,665	5,140	23,805	...	...	
758	No. 369 A.I. of 4th May 1883.	(4) L.	...	Earthwork	65,920	38,190	27,730	65,920	...	...	Half of work done.

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
					RS.	RS.	RS.	RS.	RS.	RS.	
				Eastern Section—cont.							
				3rd Sub-section—*cont.* Chendroyakodu drain—*cont.*							
759	Appendix D. of No. 181 I. of 28th Feb. 1882, and No. 962 I. of 14th Nov. 1885.		...	Earthwork	16,843	...	16,843	16,843	...	...	Lump sum.
				Total ...	82,763	38,190	44,573	82,763	...	...	
760	No. 369 A.I. of 4th May 1883.	(4) O.	...	Bench marks	1,150	...	1,150	1,150	...	...	
761	Appendix D. of No. 181 I. of 28th Feb. 1882.		...	Other masonry works ...	1,969	...	1,969	1,969	...	...	Do.
				Total ...	3,119	...	3,119	3,119	...	...	
				Total, Chendroyakodu drain.	1,29,427	61,124	68,303	1,29,427	...	...	
				Polrazkodu Main drain and affluents—							
762	No. 315 I. of 9th April 1883.	(4) B.	...	Polraz drain	15,730	560	15,170	15,730	...	...	Partly paid.
763	Do. ...		...	Komaravole affluent ...	7,260	283	6,977	7,260	...	...	Do.
764	Do. ...		...	Palakodu affluent ...	840	...	840	840	...	...	
				Total ...	23,830	843	22,987	23,830	...	...	
765	Do. ...	(4) C.	5-13½	Bridge on Polrazkodu drain.	3,650	...	3,650	3,650	...	...	
766	Do. ...		2-70	Bridge on Palakodu affluent.	3,650	...	3,650	3,650	...	...	

767	No. 241 I. of 17th April 1888.		...	Bridge on the Pamarru-Gudiváda road over the Komaravole affluent.	3,455	...	3,455	3,455	...	...	
768	No. 542 I. of 19th June 1885.		...	Bridge on the Cowtaram-Gudiváda road over the Komaravole affluent.	3,500	3,848	...	3,848	348	...	Nearly completed.
769	Appendix D. of No. 181 I. of 28th Feb. 1882, and No. 962 I. of 14th Nov. 1885.		...	Masonry works	14,128	...	14,128	14,128	...	...	Lump sum.
				Total ...	28,383	3,848	24,883	28,731	348	...	
770	No. 315 I. of 9th April 1883.	(4) L.	...	Polrazkodu drain	61,120	28,767	32,353	61,120	...	...	Half of work done.
771	Do. ...		...	Komaravole affluent ...	12,809	11,811	998	12,809	...	...	Three-fourths of work done.
772	No. 425 I. of 20th July 1888.		...	Palakodu affluent ...	2,404	2,404	...	2,404	...	...	Completed.
773	Appendix D. of No. 181 I. of 28th Feb. 1883, and No. 962 I. of 14th Nov. 1885.	(4) L.	...	Earthwork	13,709	...	13,709	13,709	...	...	Lump sum.
				Total ...	90,042	42,982	47,060	90,042	...	...	
774	Appendix D. of No. 181 I. of 28th Feb. 1883.	(4) O.	...	Miscellaneous works ...	4,716	...	4,716	4,716	...	...	Do.
				Total, Polrazkodu Main drain and affluents.	1,46,971	47,673	99,646	1,47,319	348	...	
				Kolleru embankment—							
14 775	Do. ...	(4) B.	...	Land compensation ...	904	...	904	904	...	...	Do.
776	Do. ...	(4) L.	...	Earthwork	17,935	...	17,935	17,935	...	...	Do.
				Total ...	18,839	...	18,839	18,839	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				4th Sub-section— Pullava Main drain and affluents—							
777	No. 128 I. of 5th Feb. 1884.	(4) B.	...	Main drain	500	118	382	500	...	...	Partly paid.
778	Do. ...		...	Veduruva affluent	150	...	150	150	...	...	
779	Do. ...		...	Annava affluent	200	155	45	200	...	...	Do.
				Total ...	850	273	577	850	...	...	
780	Do. ...	(4) C.	...	Outlet sluices	2,505	...	2,505	2,505	...	...	
781	Do. ...	(4) L.	...	Main drain	14,155	17,810	...	17,810	3,655	...	Three-fourths of work done.
782	No. 532 I. of 29th July 1886.		...	Veduruva affluent	1,900	1,822	78	1,900	...	...	Nearly completed.
783	No. 128 I. of 5th Feb. 1884, and No. 767 I. of 17th Nov. 1886.		...	Annava affluent	2,077	2,077	...	2,077	...	...	Completed.
				Total ...	18,132	21,709	78	21,787	3,655	...	
784	No. 128 I. of 5th Feb. 1884.	(4) O.	...	Miscellaneous works ...	365	...	365	365	...	...	
				Total, Pullava Main drain and affluents.	21,852	21,982	3,525	25,507	3,655	...	

785	Do. ...	(4) B.	...	Damidi drain— Compensation for land ...	220	97	123	220	...	...	Nearly paid.
786	Do. ...	(4) C.	...	Outlet sluices	1,865	...	1,865	1,865	...	...	
787	Do. ...	(4) L.	...	Excavation of drain ...	5,986	5,107	879	5,986	...	...	Three-fourths of work done.
788	Do. ...	(4) O.	...	Miscellaneous works ...	135	...	135	135	...	...	
789	No. 128 I. of 5th Feb. 1884, and No. 723 I. of 24th Aug. 1885.		...	Kanatikodu ramp	38	193	120	313	...	...	Nearly completed.
790	Do. ...		...	Ramachendrudukara ramp.	65						
791	Do. ...		...	Tadivada ramp	97						
792	Do. ...		...	Ramp to road from Tadivada to Dumpagadapa ferry.	113						
				Total ...	448	193	255	448	...	...	
				Total, Damidi drain ...	8,519	5,397	3,122	8,519	...	...	
793	No. 128 I. of 5th Feb. 1884.	(4) B.	...	Peddakommileru Main drain and affluents— Main drain	1,000	73	927	1,000	...	...	Partly paid.
794	Do. ...		...	Linagala or Chinna Kommileru affluent.	1,200	42	1,158	1,200	...	...	
				Total ...	2,200	115	2,085	2,200	...	...	
795	No. 128 I. of 5th Feb. 1884.	(4) C.	...	Outlet sluice Main drain ...	3,212	...	3,212	3,212	...	...	
796	Do. ...		0-70	Road dam	190	...	190	190	...	..	
797	Do. ...		5-40	Do.	360	...	360	360	...	...	
				Total ...	3,762	...	3,762	3,762	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
					RS.	RS.	RS.	RS.	RS.	RS.	
				Eastern Section—cont.							
				4th Sub-section—*cont.*							
				Peddakommileru Main drain and affluents—*cont.*							
798	No. 128 I. of 5th Feb. 1884.	(4) L	...	Main drain	29,683	26,522	3,161	29,683	...	...	Half of work done.
799	Do. ...		...	Lingala or Chinakommileru affluent.	7,907	5,876	2,031	7,907	...	...	Three-fourths of work done.
				Total ...	37,590	32,398	5,192	37,590	...	...	
800	Do. ...	(4) O.	...	Miscellaneous works to drains and affluent.	424	...	424	424	...	...	
				Total, Peddakommileru Main drain and affluents.	43,976	32,513	11,463	43,976	...	...	
				Peddalanka drain and affluents—							
801	Do. ...	(4) B.	...	Peddalanka Main drain ...	1,000	...	1,000	1,000	...	...	
802	Do. ...		...	Singarayapalem affluent ...	1,400	119	1,281	1,400	...	...	
803	Do. ...		...	Utukur affluent	150	...	150	150	...	...	
804	Do. ...		...	Kondangi affluent	200	...	200	200	...	...	
805	Do. ...		...	Mattigunta affluent ...	200	...	200	200	...	...	
806	Do. ...		...	Peddatummidi affluent ...	260	...	260	260	...	...	
807	Do. ...		...	Amudalapalli affluent ...	200	...	200	200	...	...	
				Total ...	3,410	119	3,291	3,410	...	...	
				Road dam—							
808	Do. ...	(4) C.	0-71	Singarayapalem affluent ...	370	...	370	370	...	...	
809	Do. ...		4-4	Do. do. ...	290	...	290	290	...	...	

810	Do. ...		7-33	Do. do. ...	285	...	285	285	...	...	
				Total ...	945	...	945	945	...	...	
811	Do. ...	(4) L.	...	Peddalanka Main drain ...	65,790	27,224	38,566	65,790	...	...	Nearly one-third of work finished.
812	Do. ...		...	Singarayapalem affluent ...	9,040	2	9,038	9,040	..	...	
813	Do. ...		...	Utukur affluent	1,310	...	1,310	1,310	...	...	
814	Do. ...		...	Kondangi affluent	1,530	...	1,530	5,530	...	...	
815	Do. ...		...	Mattigunta affluent ...	2,600	...	2,600	2,600	...	...	
816	Do. ...		...	Peddatummidi affluent ...	2,030	...	2,030	2,030	...	...	
817	Do. ...		...	Amudalapalli affluent ...	1,790	...	1,790	1,790	...	...	
				Total ...	84,090	27,226	56,864	84,090	...	...	
818	Do. ...	(4) O.	...	Miscellaneous works for drains and affluents.	778	...	778	778	...	...	
				Total, Peddalanka drain and affluents.	89,223	27,345	61,878	89,223	...	...	
				Lingala drain—							
819	No. 39 I. of 16th Jan. 1884.	(4) B.	...	Compensation for land ...	476	476	...	476	...	...	Completed.
820	Appendix D in No. 312 I. of 12th May 1881.	(4) L.	...	Earthwork	3,052	3,052	...	3,052	...	...	Do.
821	No. 672 I. of 1st Oct. 1886.	(4) O.	1-0	Lingala ramp	198	...	198	198	...	...	
822	Do. ...		1-68	Mandavalli and Perikigudem ramp.	208	...	208	208	...	...	
823	Do. ...		3-5	Korlapad ramp	234	...	234	234	...	...	
824	Do. ...		4-20	Rudravaram ramp	207	..	207	207	...	...	
825	Do. ...		5-56	Syamalambapuram ramp ...	252	...	252	252	...	...	
				Total ...	1,099	...	1,099	1,099	...	...	
				Total, Lingala drain ...	4,627	3,528	1,099	4,627	...	.	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				5th Sub-section— Lazabanda drain and affluents—							
826	No. 179 I. of 26th Feb. 1883.	(4) D.	...	Lazabanda drain	10,000	2,052	7,948	10,000	...	...	Partly paid.
827	Do. ...		...	Vadlamanad affluent ...	4,860	506	4,354	4,860	...	...	Do.
828	Do. ...		...	Iskaparru affluent	945	...	945	945	...	...	
829	No. 1007 I. of 27th Nov. 1885.		...	Old claims	575	575	...	575	...	...	Completed.
830	No. 179 I. of 26th Feb. 1883.		...	Compensation for land ...	2,595	...	2,595	2,595	...	...	Lump sum.
				Total ...	18,975	3,133	15,842	18,975	...	...	
831	Do. ...	(4) C.	...	Lazabanda drain bridge ...	13,680	2,087	11,593	13,680	...	...	
832	Do. ...		...	Vadlamanad affluent bridge.	9,520	7,738	1,782	9,520	...	...	About one-third of work finished.
833	Do. ...		...	Masonry works	17,412	...	17,412	17,412	...	...	Lump sum.
				Total .	40,612	9,825	30,787	40,612	...	...	
834	Do. ...	(4) L.	...	Lazabanda drain	59,843	40,437	19,406	59,843	..	...	More than half of the work finished.
835	No. 168 I. of 6th Mar. 1888.		...	Lazabanda drain, fixing guage posts.	332	...	332	332	...	...	
836	Do. ...		...	Vadlamanad affluent, fixing guage posts.	233	...	233	233	...	...	
837	No. 282 I. of 12th May 1888.		...	Excavating Vadlamanad affluent.	28,285	22,425	5,860	28,285	...	...	Nearly half of the work finished.
838	No. 179 I. of 26th Feb. 1883.		...	Iskaparru affluent	4,390	...	4,390	4,390	..	...	
839	Do. ...		...	Improvements	61,928	...	61,928	61,928	...	..	Lump sum.
				Total ...	1,55,011	62,862	92,149	1,55,011	...	...	

840	Do. ...	(4) O.	...	Cattle crossings	5,576	...	5,576	5,576	...	...	Do.
841	No. 168 I. of 6th Mar. 1888.		...	Lazabanda drain fixing mile and demarcation stones.	1,362	...	1,362	1,362	...	...	
842	Do. ...		...	Vadlamanad affluent fixing demarcation stones.	680	...	680	680	...	...	
				Total ...	7,618	...	7,618	7,618	...	...	
				Total, Lazabanda drain and affluents.	2,22,216	75,820	1,46,396	2,22,216	...	...	
843	Appendix D. of No. 181 I. of 28th Feb. 1882.	(4) B.	...	Sultanagaram drain— Compensation for land ...	412	...	412	412	...	...	Do.
844	No. 631 I. of 7th July 1884.		...	Do. old claims ...	189	189	...	189	...	...	Completed.
				Total ...	601	189	412	601	...	...	
845	Do. ...	(4) L.	...	Earthwork	2,415	...	2,415	2,415	...	...	Lump sum.
				Total, Sultanagaram drain ...	3,016	189	2,827	3,016	...	...	
846	Appendix D. of No. 181 I. of 28th Feb. 1882.	(4) B.	...	Kanakavalli drain— Compensation for land ...	1,117	...	1,117	1,117	...	...	Do.
847	Do. ...	(4) C.	...	Masonry works	16,815	...	16,815	16,815	...	...	Do.
848	Do. ...	(4) L.	..	Earthwork	8,760	...	8,760	8,760	...	...	Do.
849	Appendix D. of No. 181 I. of 28th Feb. 1882.	(4) O.	...	Miscellaneous works ...	492	...	492	492	...	...	Do.
				Total, Kanakavalli drain ...	27,184	...	27,184	27,184	...	..	
850	Do. ...	(4) B.	...	Gúdúr swamp— Compensation for land ...	375	...	375	375	..	...	Do.
851	Do. ...	(4) C.	...	Masonry works	1,500	...	1,500	1,500	...	...	Do.
852	Do. ...	(4) L.	...	Earthwork	5,625	...	5,625	5,625	...	...	Do.
				Total ...	7,500	...	7,500	7,500	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Eastern Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
853	No. 1007 I. of 27th Nov. 1885.	(4) B.	...	5th Sub-section—*cont.* Saradayapett drain, old claims	1,600	1,600	...	1,600	...	...	Completed.
				Total, Eastern Section ...	41,18,110	16,41,019	24,64,579	41,05,598	...	12,512	
				Western Section.							
854	No. 992 I. of 4th Nov. 1884.	(2) B.	...	Main canal— Compensation for land ...	10,870	7,629	3,241	10,870	...	...	
855	Do. ...	(2) D.	...	Head sluice improvements ...	15,702	15,702	...	15,702	...	...	Do.
856	No. 992 I. of 4th Nov. 1884, and No. 919 I. of 28th Oct. 1885.	(2) F.	...	Inlet on the 4th mile ...	465	465	...	465	...	...	Do.
857	No. 992 I. of 4th Nov. 1884.	(2) G.	...	Culvert on the great northern road.	610	...	610	610	...	...	
858	No. 992 I. of 4th Nov. 1884, and No. 560 I. of 13th Aug. 1886.	(2) H	...	Duggirla escape improvements	2,124	2,124	...	2,124	...	...	Do.
859	No. 992 I. of 4th Nov. 1884, and No. 919 I. of 28th Oct 1885.	(2) I.	...	Head lock improvements ...	212	212	...	212	...	...	Do.
860	No. 992 I. of 4th Nov. 1884.	(2) L.	...	Main canal widening ...	5,00,129	2,14,382	2,85,747	5,00,129	...	...	
861	Do. ...		...	Revetting sides and paving bed of hill-stream.	1,031	1,031	...	1,031	...	...	Do.
862	Do. ...		...	Stubbing trees and roots ...	17,382	9,889	7,493	17,382	...	...	More than half done.
863	Do. ...		...	Drainage channel and constructing ramp.	870	653	217	870	...	...	

864	Do. ...		...	Great northern road diversion.	2,094	2,093	1	2,094	...	...	Two-fifths of work done.
				Total ...	5,21,506	2,28,048	2,93,458	5,21,506	...	...	
865	Do. ...	(2) O.	...	Blasting in 2nd mile ..	500	441	...	441	...	59	Completed.
866	Do. ...		...	Concrete blocks	364	...	364	364	...	...	
867	Do. ...		...	Boundary stones	1,600	453	1,147	1,600	...	...	
				Total ..	2,464	894	1,511	2,405	...	59	
				Total, Main canal	5,53,953	2,55,074	2,98,820	5,53,894	...	59	
				Nizampatam canal—							
868	No. 1 I. of 5th Jan. 1888.	(2) G.	...	Bridge on Tenali road ...	11,096	9,227	1,869	11,096	...	...	
869	No. 834 I. of 23rd Sept. 1885.		...	Bridge on Isandole road ...	8,390	...	8,390	8,390	...	...	
				Total ..	19,486	9,227	10,259	19,486	...	...	
870	No. 375 I. of 26th June 1888.	(2) I.	...	Sheds for the lock establishment at Duggirala.	600	...	600	600	...	...	
871	Para. 9 of the note printed in No. 3573 of 19th Dec. 1874.	(2) L.	...	Improvements to the canal ...	10,645	...	10,645	10,645	...	...	
				Total, (2) Main canals and branches.	30,731	9,227	21,504	30,731	...	...	
872	No. 679 I. of 29th Aug. 1882, and No. 220 I. of 4th Mar. 1885.	(3) C.	...	East side channel, head sluice improvements.	3,554	2,479	1,075	3,554	...	...	
873	Para. 10 of the note printed in No. 3573 of 19th Dec. 1874, and No. 919 I. of 28th Oct. 1885.		...	West side channel, head sluice improvements.	1,093	1,093	...	1,093	...	...	Do.
874	Para. 10 of the note printed in No. 3573 of 19th Dec. 1874, and No. 834 I. of 23rd Sept. 1885.		...	Bridge across west side channel, Isandole road.	1,305	...	1,305	1,305	...	...	
875	Do. ...		...	Bridge across east side channel, Isandole road.	1,750	...	1,750	1,750	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub heads.	Mileage.	Names of Works.	Amount of sanctioned to Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
				Western Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Nizampatam canal—*cont.*							
876	Para. 10 of the note printed in No. 3573 of 19th Dec. 1874.		...	Minor masonry works ...	1,000	...	1,000	1,000	...	...	Lump sum.
				Total ...	8,702	3,572	5,130	8,702	...	...	
877	No. 679 I. of 29th Aug. 1882, No. 220 I. of 4th Mar. 1885, and No. 919 I. of 20th Oct. 1885.	(3) L	...	East side channel extension ...	6,732	6,732	...	6,732	...	...	Completed.
878	Para. 10 of the note printed in No. 3573 of 19th Dec. 1874.		...	West side channel extension.	2,055	...	2,055	2,055	...	...	
				Total ...	8,787	6,732	2,055	8,787	...	...	
				Total, (3) Distributaries ...	17,489	10,304	7,185	17,489	...	...	
				Total, Nizampatam canal ...	48,220	19,531	28,689	48,220	...	...	
				Bank canal—							
879	No. 283 I. of 12th May 1888.	(2) B.	...	Compensation for land ...	2,050	89	1,961	2,050	...	...	
880	Para. 15 of the note printed in No 3573 of 19th Dec. 1874.	(2) D.	...	Head sluice improvements ...	3,390	...	3,390	3,390	...	...	
881	Do. ...	(2) F_1	...	Inlets near Vallabhapuram ...	7,275	...	7,275	7,275	...	...	
882	No. 283 I. of 12th May 1888	(2) G.	...	Bobberlanka bridge	19,310	...	19,310	19,310	...	...	
883	Para. 15 of the note printed in No. 3573 of 19th Dec. 1074.	(2) H.	...	Kollipara surplus weir channel	2,865	...	2,865	2,865	...	...	

884	......	(2) I.	...	Head lock improvements ...	500	...	500	500	...	...	
885	No. 332 I. of 17th April 1883, and No. 919 I. of 28th Oct. 1885.		...	Kollur lock	18,812	18,812	...	18,812	...	...	Do.
886	No. 332 I. of 17th April 1883.		...	Kollur weir improvements ...	1,600	1,443	...	1,443	...	157	Do.
887	No. 314 I. of 19th Mar. 1884, and No. 767 I. of 17th Nov. 1886.		...	Vellatur lock	19,058	19,058	...	19,058	...	...	Do.
888	No. 314 I. of 19th Mar. 1884.		...	Vellatur weir improvements ..	1,578	1,302	...	1,302	...	276	Do.
889	No. 778 I. of 9th Dec. 1887.		37-30	Mortola lock weir	3,565	897	2,668	3,565	...	...	
890	Para. 15 of the note printed in No. 3573 of 19th Dec. 1874.		...	Tidal lock	26,620	...	26,620	26,620	...	...	
891	Do. ...		...	Tidal lock weir	3,310	...	3,310	3,310	...	...	
892	Do. ...		...	Raising banks above locks to hold up water for navigation.	8,000	...	8,000	8,000	...	...	
				Total ...	83,043	41,512	41,098	82,610	...	433	
893	No. 231 I. of 25th Feb. 1884, and No. 767 I. of 17th Nov. 1886.	(2) K.	...	Rest-house at Kollapara ...	1,646	1,646	...	1,646	...	...	Do.
894	No. 231 I. of 25th Feb. 1884.		...	Do. at Penumudi ...	1,640	1,550	90	1,610	...	...	More than half of work done.
895	No. 231 I. of 25th Feb. 1884, and No. 767 I. of 17th Nov. 1886.		...	Do. at Pallapatla ...	1,675	1,675	...	1,675	...	...	Completed.
				Total ..	4,961	4,871	90	4,961	...	...	
896	No. 283 I. of 12th May 1888.	(2) L.	...	Bank canal improvements ...	1,13,715	24,364	89,351	1,13,715	...	...	
897	Para. 15 of the note printed in No. 3573 of 19th Dec. 1874.	(2) O.	...	Ramps	9,750	...	9,750	9,750	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
				Western Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Bank canal—*cont.*							
898	No. 778 I. of 9th Dec. 1887.		34-0	Penumudi weir demolishing and removing.	313	...	313	313	...	...	
				Total ...	10,063	...	10,063	10,063	...	...	
				Total, (2) Main canals and branches.	2,46,672	70,836	1,75,403	2,46,239	...	433	
899	Para. 15 of the note printed in No. 3573 of 19th Dec. 1874.	(3) B.	...	Kollur channel	940	...	940	940	...	...	
900	Do. ...		...	Vellatur channel	870	...	870	870	...	...	
901	Do. ...		...	Iskapalle do.	585	...	585	585	...	...	
902	Do. ...		...	Arapalli do.	505	...	505	505	...	...	
903	Do. ...		...	Ulipalliem do.	715	...	715	715	...	...	
904	Do. ...		...	Alaparru do.	715	...	715	715	...	...	
905	Do. ...		...	Kuchimapudi do.	595	...	595	595	...	...	
906	Do. ...		...	Prignam do.	445	...	445	445	...	...	
907	Do. ...		...	Visweswaram do.	645	...	645	645	...	...	
908	Do. ..		...	Patumeraka do.	655	...	655	655	...	...	
909	Do. ...		...	Chivalur do.	255	219	36	255	...	...	
910	No. 537 I. of 6th June 1884. ...		...	Kuchanapudi north channel ...	129	23	106	129	..	...	
911	Do. ..		...	Do. channel extension	100	27	73	100	...	...	
912	Do. ...		...	Idupalli channel	124	26	98	124	...	...	
913	Do. ...		...	Peteru channel extension ...	210	138	72	210	...	...	
914	No. 62 I. of 28th Jan. 1887.		...	Kollipara channel extending...	60	26	34	60	...	..	Partly paid.
				Total ...	7,548	459	7,089	7,548	...	...	

915	Para. 15 of the note printed in No. 3573 of 19th Dec. 1874.	(3) C.	...	Kollipara channel	705	...	705	705	...	...	
916	Do. ...		...	Kollur side do.	640	...	640	640	...	...	
917	Do. ..		...	Kollur channel	1,920	...	1,920	1,920	...	...	
918	Do. ...		...	Vellatur do.	1,600	...	1,600	1,600	...	...	
919	Do. ...		...	Do. side channel ...	450	...	450	450	..	...	
920	Do. ...		...	Vemaveram do. ...	700	...	700	700	...	...	
921	Do. ...		...	Jagajeru do. ...	990	...	990	990	...	...	
922	Do. ...		...	Répalle tank do. ..	200	...	200	200	...	...	
923	Do. ...		...	Iskapalli do. ...	15,070	...	15,070	15,070	...	...	
924	Do. ...		...	Arapalli channel	1,090	...	1,090	1,090	...	...	
925	Do. ...		...	Ullipalliem do.	3,030	...	3,030	3,030	...	...	
926	Do. ...		...	Allaparu do.	3,815	...	3,815	3,815	...	...	
927	Do. ...	(3) C.	...	Kuchanapudi channel ...	3,415	...	3,415	3,415	...	...	
928	Do. ...		...	Prignam do. ...	1,810	...	1,810	1,810	...	...	
929	Do. ...		...	Nallur tank do. ...	200	...	200	200	...	...	
930	Do. ..		...	Visweswaram do. ...	2,050	...	2,050	2,050	...	...	
931	Do. ...		...	Patumeraka do. ...	1,205	...	1,205	1,205	...	...	
932	No. 537 I. of 6th June 1884. ...		...	Chivalur channel, Head sluice.	770	770	...	770	...	...	
933	Do. ...		...	Do. tail escape ...	108	10	98	108	...	...	
934	Do. ...		...	Kuchanapudi north channel ..	457	455	...	455	...	2	Completed.
935	Do. ...		...	Peteru channel extension ...	131	79	52	131	...	...	
936	Do. ...		...	Minor channel	13,534	...	13,534	13,535	...	...	Lump sum.
				Total ...	53,890	1,314	52,574	53,888	...	2	
937	Para. 15 of the note printed in No. 3573 of 19th Dec. 1874.	(3) L.	...	Kollur channel	6,370	...	6,370	6,370	...	...	
938	Do. ...		...	Vellatur do.	16,720	...	16,720	16,720	...	...	
939	Do. ...		...	Jagajeru do.	2,110	...	2,110	2,110	...	...	
940	Do. ...		...	Isakapalle do.	19,330	...	19,330	19,330	...	...	
941	Do. ...		...	Arapalli do.	2,465	...	2,465	2,465	...	...	
942	Do. ...		...	Ulipolliem do.	3,430	..	3,430	3,430	...	...	
943	Do. ...		...	Allaparru do.	2,720	...	2,720	2,720	...	...	
944	Do. ...		...	Kuchanapudi channel ...	2,635	...	2,635	2,635	...	...	
945	Do. ...	(3) L.	...	Prignam do.	2,600	...	2,600	2,600	...	...	
946	Do. ...		...	Nallur tank do.	1,250	...	1,250	1,250	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

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				Western Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Bank canal—*cont.*							
947	Para. 15 of the note printed in No. 3573 of 19th Dec. 1874.		...	Visweswaram channel ...	3,980	...	3,980	3,980	...	...	
948	Do. ...		...	Patumeraka do.	2,300	...	2,300	2,300	...	...	
949	No. 537 I. of 6th June 1884.		...	Chivalur do.	1,020	998	22	1,020	...	...	
950	Do. ...		...	Kuchanapudi channel extension.	1,300	1,247	53	1,300	...	...	
951	Do. ...		...	Idupalli channel	615	549	66	615	...	...	
952	Do. ...		...	Peteru channel extension ...	1,120	690	430	1,120	...	...	
953	Do. ...		...	Minor channels	9,862	...	9,862	9,862	...	...	Lump sum.
954	No. 537 I. of 6th June 1884 and No. 819 I. of 28th Oct. 1885.		...	Kuchanapudi north channel...	208	208	...	208	...	...	Completed.
955	No. 62 I. of 28th Jan. 1887.		...	Kallipara channel extending.	1,730	1,247	483	1,730	...	...	More than half of work done.
				Total ...	81,765	4,939	76,826	81,765	...	...	
				Total, (3) Distributaries ...	1,43,203	6,712	1,36,489	1,43,201	...	2	
				Total, Bank Canal ...	3,89,875	77,548	3,11,892	3,89,440	...	435	
				Commamur Canal—							
956	No. 124 I. of 9th Feb. 1885.	(2) B.	...	1st reach	3,639	10,915 (956–958)	1,513	12,428	...	...	
957	Do. ...		...	2nd do.	2,565						
958	Do. ...		...	3rd do.	6,224						
959	Do. ..		...	New cut from Guntúr nallah to the culvert.	875	207	668	875	...	...	

960	Do. ...		...	Vejendla quarries	975	974	1	975	...	...	
961	Do. ...		...	Apperu outfall channel	170	59	111	170	...	...	
962	Do. ...		...	Stop bank between Alleru and Apperu.	720	385	335	720	...	...	
963	Do. ...		...	Emileru diversion bank ...	900	146	754	900	...	...	
				Total ...	16,068	12,686	3,382	16,068	...	...	
964	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.	(2) D.	13-0	Commamur head sluice ...	2,593	2,593	...	2,593	...	...	Completed.
965	No. 797 I. of 9th Oct. 1882.	(2) F.	7-50	Guntúr nallah surplus and culvert.	21,280	20,987	293	21,280	...	...	
966	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		18-60	Kollimerla aqueduct, improvements.	4,354	4,354	...	4,354	...	...	Do.
967	No. 739 I. of 8th Sept. 1883 and No. 919 I. of 28th Oct. 1885.		19-13	Kollimerla outlet, 880 feet long.	3,506	3,506	...	3,506	...	...	Do.
968	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		19-13	Kollimerla inlet, 880 feet long.	2,668	2,668	...	2,668	...	...	Do.
969	No. 797 I. of 9th Oct. 1882.		23-20	Nakkavagu aqueduct ...	22,570	...	22,570	22,570	...	...	
970	Do. ...		23-60	Do. outlet, 1,800 feet long.	7,103	7,103	...	7,103	...	...	Do.
971	Do. ...		23-60	Do. inlet, 1,800 feet long.	3,770	...	3,770	3,770	...	...	
972	No. 797 I. of 9th Oct. 1882 and No. 659 I. of 25th Oct. 1887.		27-20	Appapuram outlet, 1,800 feet long.	8,063	8,063	...	8,063	...	...	Do.
973	No. 739 I. of 8th Sept. 1883.		27-70	Nallamada outlet, 2,150 feet long.	7,004	7,004	...	7,004	...	...	Do.
974	No. 491 I. of 20th Aug. 1888.		...	Nallamada outlet near surplus sluice.	6,675	...	6,675	6,675	...	...	
975	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		28-10	Nallamada surplus sluices, improvements.	3,619	3,619	...	3,619	...	...	Do.
976	No 797 I. of 9th Oct. 1882.		28-10	Nallamada aqueduct, improvements.	40,690	...	40,690	40,690	...	...	

Revis ed Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase	De-crease.	
				Western Section—cont. Commamur canal—*cont.*	RS.	RS.	RS.	RS.	RS.	RS.	
977	No. 797 I. of 9th Oct. 1882.	(2) F.	29-45	Cherukur outlet, 800 feet long.	3,290	...	3,290	3,290	...	...	
978	Do. ...		29-45	Do. inlet, 800 „ „	1,880	...	1,880	1,880	...	...	
979	Do. ...		32-71	Murkondapad outlet, 2,700 feet long.	10,980	10,524	456	10,980	...	...	Nearly completed.
280	Do. ...		32-71	Murkondapad inlet, 2,700 feet long.	6,350	...	6,350	6,350	...	...	
981	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		33-10	Sakkicalva outlet, 880 feet long	6,088	6,088	...	6,088	...	...	Completed.
982	No. 797 I. of 9th Oct. 1882.		33-10	Do. inlet, 880 „ „	2,185	435	1,750	2,185	...	...	
983	No. 123 I. of 9th Feb. 1885 and No. 659 I. of 25th Oct. 1887.		33-13	Do. aqueduct, 880 feet long.	17,573	17,573	...	17,573	...	...	Do.
984	No. 797 I. of 9th Oct. 1882 and No. 1027 I. of 17th Nov. 1884.		36-16	Purchurvagu surplus weir, improvements.	2,328	2,328	...	2,328	...	...	Do.
985	No. 797 I. of 9th Oct. 1882 and No. 767 I. of 17th Nov. 1886.		36-30	Purchurvagu outlet, 500 feet long.	1,712	1,712	...	1,712	...	...	Do.
986	No. 797 I. of 9th Oct. 1882.		36-30	Purchurvagu inlet, 500 feet long.	1,330	...	1,330	1,330	...	...	
987	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		38-57	Karenchedu outlet, 830 feet long.	3,798	3,798	...	3,798	...	...	Do.
988	No. 797 I. of 9th Oct. 1882.		38-57	Karenchedu inlet, 830 feet long.	2,180	...	2,180	2,180	...	...	
989	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		38-70	Karenchedu aqueduct ...	11,642	11,642	...	11,642	...	...	Do.

990	No. 797 I. of 9th Oct. 1882 and No. 767 I. of 17th Nov. 1886.		42-6	Swerna outlet, 200 feet long.	977	977	...	977	...	...	Do.
991	No. 797 I. of 9th Oct. 1882.		42-6	Do. inlet, 200 " "	670	...	670	670	...	...	
992	No. 123 I. of 9th Feb. 1885.		42-30	Do. aqueduct, 200 feet long.	10,732	10,735	...	10,735	3	...	Do.
993	No. 797 I. of 9th Oct. 1882.		42-60	Do. outlet, 300 feet long.	1,360	...	1,360	1,360	...	...	
994	Do. ...		42-60	Do. inlet, 300 " "	925	...	925	925	...	...	
995	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		45-70	Alleru surplus sluices, improvements.	2,063	2,063	...	2,063	...	...	Do.
996	No. 797 I. of 9th Oct. 1882.		46-20	Alleru outlet, 810 feet long ...	3,190	2,955	235	3,190	...	...	
997	No. 919 I. of 28th Oct. 1885.		46-20	Do. inlet, 810 " "	2,973	2,973	...	2,973	...	...	Do.
998	Do. ...		49-39	Apperu outlet, 185 feet long.	795	795	...	795	...	...	Do.
999	Do. ...		49-39	Do. sluices in outlet ...	2,503	2,503	...	2,503	...	...	Do.
1000	No. 797 I. of 9th Oct. 1882.		49-39	Do. inlet	380	97	283	380	...	...	
1001	No. 375 I. of 4th April 1884 and No. 919 I. of 28th Oct. 1885.		54-14	Firinghidibha outlet, 2,000 feet long.	8,268	8,268	...	8,268	...	...	Do.
1002	No. 797 I. of 9th Oct. 1882 and No. 767 I. of 17th Nov. 1886.		54-14	Firinghidibha inlet, 2,000 feet long.	5,491	5,491	...	5,491	...	...	Do.
1003	No. 919 I. of 28th Oct. 1885.		...	Emileru outlet	119	119	...	119	...	...	Do.
1004	Do. ...		...	Do. inlet on 52nd mile ...	296	296	...	296	...	...	Do.
1005	No. 63 I. of 28th Jan. 1887.		...	Raising the crest of the Appapuram outlet.	1,020	1,051	...	1,051	31	...	
				Total ...	2,44,400	1,49,727	94,707	2,44,434	34	...	
1006	No. 797 I. of 9th Oct. 1882.	(2) G.	3-0	Kolakalur bridge, improvements.	50	...	50	50	...	...	Lump sum.
1007	No. 630 I. of 14th Sept. 1886.		21-0	Pandrapad bridge	11,540	9,758	1,782	11,540	...	...	Half done.
1008	No. 797 I. of 9th Oct. 1882.		38-75	Karenchedu do.	9,760	9,737	23	9,760	...	...	

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					RS.	RS.	RS.	RS.	RS.	RS.	
				Western Section—cont.							
				Commamur canal—*cont.*							
1009	No. 956-A I. of 24th Oct. 1884.	(2) G.	49-37	Inkole road bridge	13,446	12,491	955	13,446	...	...	
1010	No. 122 I. of 9th Feb. 1885.		55-30	Coast road do.	11,080	10,688	392	11,080	...	...	
				Total ...	45,876	42,674	3,202	45,876	...	...	
1011	No. 523 I. of 26th July 1886.	(2) I.	8-30	Jagerlamudi lock, improvements.	1,100	1,114	...	1,114	14	...	Completed.
1012	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		8-30	Jagarlamudi lock weir ...	2,718	2,718	...	2,718	...	...	Do.
1013	Do. ...		13-30	Chebrole bridge tow-path ...	1,187	1,187	...	1,187	...	...	Do.
1014	No. 797 I. of 9th Oct. 1882.		18-70	Kollimerla lock	28,410	27,831	579	28,410	...	...	
1015	Do. ...		18-70	Do. lock weir	7,730	7,632	98	7,730	...	...	
1016	Do. ...		30-58	Nallamada lock	27,430	26,554	876	27,430	...	..	
1017	Do. ...		30-58	Do. lock weir	4,950	4,877	73	4,950	...	...	
1018	No. 797 I. of 9th Oct. 1882 and No. 919 I. 28th Oct. 1885.		46-30	Santharavur lock	13,939	13,939	...	13,939	...	...	Do.
1019	No. 797 I. of 9th Oct. 1882.		57-38	Peddaganjam lock	52,600	51,844	756	52,600	...	...	
				Total ...	1,40,064	1,37,696	2,382	1,40,078	14	...	
1020	No. 230 I. of 25th Feb. 1884 and No. 767 I. of 17th Nov. 1886.	(2) K	...	Nallamada rest-house, first class.	1,929	1,929	...	1,929	...	...	Do.

1021	No. 230 I. of 25th Feb. 1884 and No. 919 I. of 28th Oct. 1885.		...	Karinchedu rest-house, first class.	1,999	1,999	...	1,999	...	...	Do.
				Total ...	3,928	3,928	...	3,928	...	...	
1022	No. 797 I. of 9th Oct. 1882.	(2) L.	1-0 to 8-30	Improvements, 1st Reach ...	68,379						
1023	Do. ...		8-30 to 18-70	Do. 2nd " ..	60,252						
1024	Do. ...		18-70 to 30-58	Do. 3rd " ...	41,529						
1025	Do. ...		30-58 to 46-30	Do. 4th " ...	32,210	1,16,804	1,63,786	2,80,590	...	...	
1026	Do. ...		46-30 to 55-30	Do. 5th " ...	46,656						
1027	Do. ...		...	Cost of original line from Feringhidibba to Romperu.	18,202						
1028	Do. ...		...	Petty supervision at 3 per cent.	8,017						
1029	Do. ...		...	Contingencies	5,345						
1030	No. 797 I. of 9th Oct. 1882, and No. 767 I. of 17th Nov. 1886.		...	Excavating new cut from Guntúr nulla to the culvert.	2,290	2,290	...	2,290	...	...	Do.
1031	No. 797 I. of 9th Oct. 1882.		...	Bank across second part of Nallamada drainage.	1,500	...	1,500	1,500	...	...	
1032	Do. ...		...	Outfall channel from Apperu sluices to Romperu.	15,650	...	15,650	15,650	...	...	
1033	No. 797 I. of 9th Oct. 1882 and No. 919 I. of 28th Oct. 1885.		...	Stop bank between Alleru and Apperu.	1,681	1,681	...	1,681	...	...	Do.
1034	Do. ...		...	Emilleru diversion bank ...	4,133	4,133	...	4,133	...	...	Do.
1035	Do. ...		...	Stop bank between Feringhidibba and Uppukondur swamps.	1,211	1,211	...	1,211	...	...	Do.
				Total ...	3,07,055	1,26,119	1,80,936	3,07,055	...	..	
1036	No. 544 I. of 4th Aug. 1886.	(2) O.	...	Cattle crossing at Duggerala.	990	774	...	774	...	216	Do.
1037	No. 797 I. of 9th Oct. 1882.		...	Do. at Sekurpalem.	800	...	800	800	...	...	

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				Western Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Commamur canal—*cont.*							
1038	No. 252 I. of 5th Mar. 1884 and No. 919 I. of 28th Oct. 1885.	(2) O.	...	Cattle crossing at Vadlamudi.	800	800	...	800	...	...	Completed.
1039	No. 797 I. of 9th Oct. 1882.		...	Do. at Appapuram ...	900	...	900	900	...	...	
1040	No. 919 I. of 28th Oct 1885 and No. 767 I. of 17th Nov. 1886.		...	Do. at Kunkalamarru	997	997	...	997	...	...	Do.
1041	No. 797 I. of 9th Oct. 1882.		...	Do. at Swerna ...	1,100	...	1,100	1,100	...	...	
1042	Do. ..		...	Do. at Gonasapudi ...	1,200	...	1,200	1,200	...	...	
1043	No. 267 I. of 5th May 1888.		...	Do. at Santaravur ...	2,991	...	2,991	2,991	...	...	
				Total ...	9,778	2,571	6,991	9,562	...	216	
				Total, (2) Main canals and branches.	7,69,762	4,77,994	2,91,600	7,69,594	...	168	
1044	No. 754 I. of 2nd Dec. 1887.	(3) A.	...	Survey establishment for surveying and levelling the proposed canal from Nallamadu to Vadarevu and Romperu drain.	360	...	360	360	...	...	
1045	No. 141 I. of 12th Feb. 1883 and No. 1053 I of 24th Nov. 1884.	(3) B.	...	Moorkondapad channel ...	752	752	...	752	...	...	Do.
1046	No. 797 I. of 9th Oct. 1882.		7-50	L. B. Tungabhadra side channels.	2,470	...	2,470	2,470	...	...	

1047	No. 520 I. of 13th June 1885.		8-30	L. B. Jagerlamudi channel ...	2,440	1,243	1,197	2,440	...	...	
1048	No. 520 I. of 13th June 1885.		...	Yeddapalli channel	350	14	336	350	...	...	Partly paid.
1049	Do. ...		...	Penugudurupad East side channel.	54	17	37	54	...	...	
1050	Do. ...		...	Penugudurupad West side channel.	500	...	500	500	...	...	
1051	No. 254 I. of 4th April 1887.		10-75	Srirangapuram channel ...	2,364	1,097	1,267	2,364	...	...	
1052	Do. ...		...	Do. No. 1 Branch ...	455	432	23	455	...	...	
1053	Do. ...		...	Do. ,, 2 do. ...	218	119	99	218	...	...	
1054	Do. ...		...	Do. ,, 3 do. ...	161	64	97	161	...	...	
1055	No. 797 I. of 9th Oct. 1882.		25-10	Poondla channel	1,600	...	1,600	1,600	...	...	
1056	Do. ...		29-17	Bapatla channel	1,340	...	1,340	1,340	...	...	
1057	Do. ...		...	Do. Valu channel ...	1,500	...	1,500	1,500	...	...	
1058	Do. ...		...	Do. 1st East branch ...	600	...	600	600	...	...	
1059	Do. ...		...	Do. 1st West do. ...	700	...	700	700	...	...	
1060	Do. ...		...	Do. 2nd East do. ...	965	...	965	965	...	...	
1061	Do. ...		...	Do. 2nd West do. ...	1,140	...	1,140	1,140	...	...	
1062	Do. ...		...	Do. 2nd Kankatapalem.	230	...	230	230	...	...	
1063	No. 452 I. of 16th May. 1885.		46-30	Santharavur side channel ...	660	227	433	660	...	...	
1064	Do. ...		...	Do. No. 1 branch channel.	243	...	243	243	...	...	
1065	Do. ...		...	Do. ,, 2 do. ...	95	...	95	95	...	...	
1066	Do. ...		...	Do. ,, 3 do. ...	84	...	84	84	...	...	
1067	Do. ...		...	Do. ,, 4 do. ...	162	...	162	162	...	...	
1068	No. 391 I. of 4th July 1888.		...	Branch channel from Muthur channel.	102	...	102	102	...	...	
1069	No. 15 I. of 10th Jan. 1887.		...	Sakikalva side channel ...	403	302	101	403	...	...	Do.
				Total ...	19,588	4,267	15,321	19,588	...	...	
1070	No. 2598 of 31st Oct. 1870.	(3) C.	...	Budam channels	9,523	9,523	...	9,523	...	...	

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					RS.	RS.	RS.	RS.	RS.	RS.	
				Western Section—cont.							
				Commamur canal—*cont.*							
1071	No. 141 I. of 12th Feb. 1883 and No. 919 I. of 28th Oct. 1885.		...	Moorkondapad channels ...	1,172	1,172	...	1,172	...	...	Completed.
1072	No. 343 I. of 24th Sept. 1887.		7-50	Tungabhadra side channel head sluice.	1,360	...	1,360	1,360	...	...	
1073	Do. ...		...	Tungabhadra bridge at Tenali road and elsewhere.	9,150	...	9,150	9,150	...	...	Lump sum.
1074	Do. ...		...	Tungabhadra Aremandla sluice.	550	...	550	550	...	...	Do.
1075	Do. ...		...	Tungabhadra minor channel.	2,000	...	2,000	2,000	...	...	Do.
				Jagerlamudi channel—							
1076	No. 520 I. of 13th June 1885.		8-30	Head sluice	765	765	...	765	..	...	Completed.
1077	No. 659 I. of 25th Oct. 1887.		...	Culvert in $\frac{1}{11}$ mile ...	751	751	...	751	...	...	Do.
1078	Do. ...		...	Drop in $\frac{5}{8}$ mile	311	311	...	311	...	...	Do.
1079	Do. ...		...	Do. in 1$\frac{7}{8}$ do.	345	345	...	345	...	...	
1080	No. 520 I. of 13th June 1885.		...	Do. in 4$\frac{1}{8}$ do.	313	...	313	313	...	...	Do.
1081	Do. ...		...	Do. in 8$\frac{5}{16}$ do. ...	271	...	271	271	...	...	
1082	Do. ...		...	Tenali escape	103	...	103	103	...	...	
				Yedlapalli channel—							
1083	No. 520 I. of 13th June 1885.		...	Head sluice	706	...	706	706	...	...	
1084	Do. ...		...	Tenali escape	109	...	109	109	...	...	
				Oliveru channel—							
1085	No. 659 I. of 25th Oct. 1887.		...	Head sluice	285	285	...	285	...	...	Do.
1086	No. 520 I. of 13th June 1885.		...	Terminal escape ...	90	...	90	90	...	...	

				Penugudurupad East side channel—							
1087	Do. ...		...	Head sluice	282	22	260	282	...	...	
1088	Do. ...		...	Terminal escape	50	...	50	50	...	...	
				Penugudurupad West side channel—							
1089	Do. ...		...	Head sluice	280	212	68	280	...	...	
1090	Do. ...		...	Terminal escape	45	...	45	45	...	...	
				Srirangapuram channel—							
1091	No. 479 I. of 11th Aug. 1888.		10-75	Head sluice	973	973	...	973	...	...	Do.
1092	No. 254 I. of 4th April 1887.		...	Culvert	399	56	343	399	...	...	
				No. 1 Branch—							
1093	Do. ...		...	Head sluice	290	31	259	290	...	...	
1094	Do. ...		...	Masonry dam	350	76	274	350	...	...	
1095	Do. ...		...	Iron trough aqueduct ...	560	132	428	560	...	...	
1096	Do. ...		...	Culvert	376	2	374	376	...	...	
1097	Do. ...		...	Terminal escape ...	120	1	119	120	...	...	
				No. 2 Branch—							
1098	Do. ...		...	Head sluice	274	...	274	274	...	...	
1199	Do. ...		...	Masonry dam	390	34	356	390	...	...	
1100	Do. ...		...	Terminal escape	112	1	111	112	...	...	
				No. 3 Branch—							
1101	Do. ...		...	Head sluice	270	32	238	270	...	...	
1102	Do. ...		...	Terminal escape	135	1	134	135	...	...	
				Chebrole channel—							
1103	No. 343 I. of 24th Sept. 1877.		8-30	Head sluice	630	...	630	630	...	...	
1104	Do. ...		...	Minor channels and sluices.	150	...	150	150	...	...	Lump sum.
				Mannava channel—							
1105	Do. ...		13-30	Head sluice	400	...	400	400	...	...	Do.
1106	Do. ...		...	Tail escape weir	380	...	380	380	...	...	
1107	Do. ...		...	Minor channels	200	...	200	200	...	...	Do.
1108	Do. ...		21-10	Commamur tank supply channel, minor channels.	900	...	900	900	..	...	Do.
1109	Do. ...		23-10	Poondla channel head sluice...	2,040	...	2,040	2,040	...	...	
1110	Do. ...		...	Head sluice to Appicatla channel.	500	...	500	500	...	...	Do.

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate: Expenditure incurred to end of 1887-88.	Revised Estimate: Further expenditure.	Revised Estimate: Total.	Difference: Increase.	Difference: Decrease.	Remarks.
					RS.	RS.	RS.	RS.	RS.	RS.	
				Western Section—cont.							
				Commamur canal—*cont.*							
1111	No. 343 I. of 24th Sept. 1877.	(3) C.	...	Head sluice to Ravanappa channel.	500	...	500	500	...	...	Lump sum.
1112	Do. ...		...	Tail escape weir	530	...	530	530	...	...	
1113	Do. ...		...	Minor channels	800	...	800	800	...	...	Do.
				Retur side channel—							
1114	No. 343 I. of 24th Sept 1877.		23-70	Head sluice	690	...	690	690	...	...	
1115	Do. ...		...	Minor channels	200	...	200	200	...	...	Do.
				Bápatla channel—							
1116	Do. ...		29-17	Dividing sluice at head ...	3,050	...	3,050	3,050	...	...	
1117	Do. ...		...	Do. for first east and west branches.	2,950	...	2,950	2,950	...	...	
1118	Do. ...		...	Do. for second east and west branches.	2,360	...	2,360	2,360	...	...	
1119	Do. ...		...	Minor channels	2,000	...	2,000	2,000	...	...	
1120	Do. ...		1-20	Bápatla first west branch, tail escape weir.	440	...	440	440	...	...	
1121	Do. ...		2-20	Bápatla second east branch, tail escape weir.	460	...	460	460	...	...	
1122	Do. ...		2-20	Bápatla second west branch, tail escape weir.	440	...	440	440	...	...	
				Kankatapalem channel—							
1123	Do. ...		...	Head sluice	300	...	300	300	...	...	Do.
1124	D6. ...		...	Tail escape weir	470	...	470	470	...	...	
1125	Do. ...		29-30	Narasayapalem channel, minor channels.	500	...	500	500	...	...	Do.
1126	Do. ...		35-30	Kunkalamarru minor channels.	500	...	500	500	...	...	Do.

1127	No. 482 I. of 13th May 1884 and No. 767 I. of 17th Nov. 1886.		40-26	Karinchedu minor channels ...	524	524	...	524	...	...	Completed.
1128	No. 343 I. of 24th Sept. 1877.		42-70	Swerna do. ..	600	...	600	600	...	...	Lump sum.
				Santaravur side channel—							
1129	No. 452 I. of 16th May 1885.		...	Head sluice	870	857	13	870	...	...	Almost completed.
1130	Do. ...		...	No. 1 Branch channel head sluice.	473	...	473	473	...	...	
1131	Do. ...		...	No. 2 Branch channel head sluice.	370	...	370	370	...	...	
1132	Do. ...		...	No. 3 Branch channel ...	342	...	342	342	...	...	
1133	Do. ...		...	No. 4 do. ...	70	...	70	70	...	...	
1134	No. 15 I. of 10th Jan. 1887.		...	Sakikalva head sluice... ...	820	599	221	820	...	...	
1135	Do. ...		...	Do. masonry fall in 3rd mile.	490	247	243	450	...	...	
				Total ...	58,659	16,952	41,707	58,659	...	...	
1136	No. 2598 of 31st Oct. 1870.	(3) L	...	Budam channels	37,098	37,097	...	37,097	...	1	Completed.
1137	No. 141 I. of 12th Feb. 1883.		...	Moorkondapad channels ...	1,880	1,636	244	1,880	...	...	
1138	No. 797 I. of 9th Oct. 1882.		7-50	Tungabhadra side channel ...	8,660	...	8,660	8,660	...	...	
1139	Do. ...		...	Do. minor do.	4,100	...	4,100	4,100	...	...	Lump sum.
1140	No. 520 I. of 13th June 1885.		...	Jagerlamudi channel	5,313	5,270	43	5,313	...	...	
1141	Do. ...		...	Do. Yeddapalli channel.	730	581	149	730	...	...	Three-fourths of work done.
1142	No. 520 I. of 13th June 1885.		...	Do. Oliveru do.	853	853	...	853	...	...	Completed.
1143	No. 767 I. of 17th Nov. 1886.		...	Do. Penugudurupad east side channel.	425	425	...	425	...	...	Do.
1144	No. 520 I. of 13th June 1885.		...	Do. Penugudurupad west side channel.	820	596	224	820	...	...	Half of work done.
1145	Do. ...		8-30	Chebrole minor channels ...	300	...	300	300	...	...	Lump sum.

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	Decrease.	
				Western Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Commamur canal—*cont.*							
1146	No. 254 I. of 4th April 1887.	(3) L.	10 75	Srirangapuram channel ...	8,544	6,507	2,037	8,544	...	...	
1147	Do. ...		...	No. 1 Branch	1,000	...	1,000	1,000	...	...	
1148	Do. ...		...	„ 2 do.	480	...	480	480	...	...	
1149	Do. ...		...	„ 3 do.	490	...	490	490	...	...	
1150	No. 797 I. of 9th Oct. 1882.		13-30	Mannava channels	600	...	600	600	...	...	Lump sum.
1151	Do. ...		21-20	Commamur tank supply channel.	1,800	...	1,800	1,800	...	...	Do.
1152	Do. ...		23-10	Poondla channel	7,450	...	7,450	7,450	...	...	
1153	Do. ...		...	Do. minor channels ...	1,700	...	1,700	1,700	...	...	
1154	Do. ...		23 70	Retrr do. ...	500	...	500	500	...	...	Do.
1155	Do. ...		29-17	Bápatla channel	16,700	408	16,292	16,700	...	...	Do.
1156	Do. ...		...	Do. minor channels ...	6,000	...	6,000	6,000	...	...	
1157	Do. ...		...	Do. Velu channel ...	10,850	...	10,850	10,850	...	...	Do.
1158	Do. ...		...	Do. first east branch ...	2,880	...	2,880	2,880	...	...	
1159	Do. ...		...	Do. do. west do. ...	2,860	...	2,860	2,860	...	...	
1160	Do. ...		...	Do. second east do. ...	8,220	...	8,220	8,220	...	...	
1161	Do. ...		...	Do. do. west do. ...	5,500	...	5,500	5,500	...	...	
1162	Do. ...		...	Kankatapalem minor channels	1,430	...	1,430	1,430	...	...	
1163	Do. ...		29-30	Narayanapalem do.	1,100	...	1,100	1,100	...	...	
1164	Do. ...		35-30	Kankalamarru do.	1,100	...	1,100	1,100	...	...	Do.
1165	Do. ...		40-26	Karinchedu do.	1,450	...	1,450	1,450	...	...	Do.
1166	Do. ...		42-70	Swerna do.	1,000	...	1,000	1,000	...	...	Do.
1167	No. 391 I. of 4th July 1888.		...	Branch channel from Mutlur channel.	363	...	363	363	...	...	Do.
1168	No. 452 I. of 16th May 1885 and No. 919 I. of 28th Oct. 1885.		...	Santharavur side channel ...	1,231	1,231	...	1,231	...	...	Completed.

1169	Do. ...		..	Do No. 1 Branch channel.	446	441	...	441	...	5	Do.
1170	Do. ...		..	Do. No. 2 Branch channel	380	380	...	380	...	...	Do.
1171	Do. ...		...	Do. No. 3 Branch channel.	383	...	383	383	...	...	
1172	Do. ...		...	Do. No. 4 Branch channel.	294	...	294	294	...	...	
1173	No. 318 I. of 20th Mar. 1884 and No. 919 I. of 28th Oct. 1885.		...	Jupudy channel	2,623	2,623	...	2,623	...	...	Do.
1174	No. 15 I. of 10th Jan. 1887.		...	Sakikalva side channel ...	2,160	1,342	818	2,160	...	...	Half of work done.
				Total ...	1,49,713	59,390	90,317	1,49,707	...	6	
1175	No. 797 I. of 9th Oct. 1882.	(3) O.	...	Tungabhadra side channel seven cattle-crossings.	2,000	...	2,000	2,000	...	...	Lump sum.
				Total, (3) Distributaries ...	2,30,320	80,609	1,49,705	2,30,314	...	6	
				Total, Commamur canal ...	10,00,082	5,58,603	4,41,305	9,99,908	...	174	
1176	No. 27 I. of 9th Jan. 1885.	(4) B.	...	Drainage channel from Emileru stream to Feringhidibba inlet.	900	891	9	900	...	...	
1177	Do. ...	(4) L.	...	Excavating the channel ...	9,528	5,403	4,125	9,528	...	...	
				Total ...	10,428	6,294	4,134	10,428	...	...	
1178	No. 889 I. of 8th Nov. 1883.	(4) B.	...	Répalle drain	18,300	2,388	15,912	18,300	...	...	
1179	Do. ...		...	Nandivelugu affluent ...	600	...	600	600	...	...	
1180	Do. ...		...	Jagudugunta do.	210	...	210	210	...	...	
1181	Do. ...		...	Gunderu do.	960	...	960	960	...	...	
1182	No. 520 I. of 3rd Sept. 1888.		...	Lunjagunta do.	68	258	— 190	68	...	...	
1183	No. 889 I. of 8th Nov. 1883.		...	Kovur do.	750	114	636	750	...	...	
1184	Do. ...		...	Nagaram do.	810	...	810	810	...	...	
				Total ...	21,698	2,760	18,938	21,698	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks.
				Western Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Répalle drain—*cont.*							
1185	No. 889 I. of 8th Nov. 1883.	(4) C.	...	Bridge at 8 miles 20 chains.	7,430	...	7,430	7,430	...	...	
1186	Do. ...		...	Do. at 25 „ 72 „	12,310	10,505	1,805	12,310	...	...	
1187	Do. ...		...	Do. at 39 „ 25 „	14,430	12,490	1,940	14,430	...	...	
1188	Do. ...		...	Kavur affluent bridge at 3 miles 53 chains.	5,036	4,480	...	4,480	...	556	Completed.
1189	No. 323 I. of 18th May 1887.		...	One inlet sluice	817	401	416	817	...	...	
1190	No. 331 I. of 25th May 1887.		...	One outlet sluice	380	185	195	380	...	...	
				Total ...	40,403	28,061	11,786	39,847	...	556	
1191	No. 889 I. of 8th Nov. 1883.	(4) L.	...	Répalle drain	1,42,700	1,04,649	38,051	1,42,700	...	...	Three-fourths of work done.
1192	Do. ...		...	Nandivelugu affluent ...	2,050	...	2,050	2,050	...	...	
1193	Do. ...		...	Jagadigunta do.	1,760	...	1,760	1,760	...	...	
1194	Do. ...		...	Gunderu do.	9,390	...	9,390	9,390	...	...	
1195	No. 520 I. of 3rd Sept. 1888.		...	Lanjagunta do.	2,286	...	2,286	2,286	...	...	
1196	No. 889 I of 8th Nov. 1883.		...	Kovur do.	12,190	10,421	1,769	12,190	...	...	
1197	Do. ..		...	Panukalva do.	4,620	1,034	3,586	4,620	...	...	
1198	Do. ...		...	Nagaram	4,826	...	4,826	4,826	...	...	
1199	Do. ...		...	Nallamadu affluent	...	2	...	2	...	...	
				Total ...	1,79,822	1,16,106	63,718	1,79,824	...	...	
1200	Do. ...	(4) O.	...	Wooden gauges	240	122	118	240	...	...	
1201	No. 573 I. of 28th Sept. 1887.		...	Fixing demarcation stones on both sides of the drain.	4,900	1,411	3,489	4,900	...	...	

				Total ...	5,140	1,533	3,607	5,140	...	...	
				Total, Répalle drain ...	2,47,063	1,48,460	98,049	2,46,509	...	554	
				Bhathprole drain—							
1202	No. 417 I. of 18th July 1888.	(4) C.	...	Aqueduct to carry Iskáplle channel.	15,601	...	15,601	15,601	...	...	
1203	Appendix D. printed in No. 181 I. of 28th Feb. 1882.	(4) L.	...	Earthwork	28,166	...	28,166	28,166	...	...	Lump sum.
1204	Do. ...	(4) O.	...	Miscellaneous works	2,439	...	2,439	2,439	...	...	Do.
				Total ...	46,206	...	46,206	46,206	..	...	
				Peddapalli drain—							
1205	No. 988 I. of 8th Nov. 1883.	(4) B.	...	Compensation for land ...	123	96	27	123	...	...	
1206	Do. ...	(4) L.	...	Earthwork	2,210	1,930	280	2,210	...	...	
				Total ..	2,333	2,026	307	2,333	...	...	
				Nizampatam drain—							
1207	Do. ...	(4) B.	...	Compensation for land ...	3,350	...	3,350	3,350	...	...	
1208	Do. ...	(4) C.	...	Bridge at 4 miles	6,740	...	6,740	6,740	...	...	
1209	Do. ...	(4) L.	...	Earthwork	6,801	...	6,801	6,801	...	...	
				Total ...	16,891	...	16,891	16,891	...	...	
				Tungabhadra drain—							
1210	No. 39-A I. of 16th Jan. 1884.	(4) B.	...	Old claims	80	...	80	80	...	...	
1211	Do. ...		...	Main drain	12,972	575	12,397	12,972	...	...	Partly paid.
1212	No. 499 I. of 27th Aug. 1888.		...	Nallamada affluent	3,000	...	3,000	3,000	...	...	
1213	Do. ...		...	Other affluents	1,120	...	1,120	1,120	...	...	Lump sum.
				Total ...	17,172	575	16,597	17,172	...	...	
1214	Appendix D. printed in No. 181 I. of 28th Feb. 1882.	(4) C.	...	Masonry works	99,794	...	99,794	99,794	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
				Western Section—cont.	RS.	RS.	RS.	RS.	RS.	RS.	
				Tungabhadra drain—*cont.*							
1215	No. 99 I. of 2nd Feb. 1885.	(4) L.	...	Excavating main drain ...	1,27,158	32,669	94,789	1,27,458	...	...	
1216	No. 499 I. of 27th Aug. 1888.		...	Nallamada affluent	1,32,065	...	1,32,065	1,32,065	...	...	
1217	Do. ...		...	Other affluents	2,32,630	...	2,32,630	2,32,630	...	...	Lump sum.
				Total ...	4,92,153	32,669	4,59,484	4,92,153	...	...	
1218	No 99 I. of 2nd Feb. 1885.	(4) O.	...	Wooden gauges, main drain...	420	...	420	420	...	...	
1219	Do. ...		...	Bench-mark stones for main drain and affluents.	2,055	276	1,779	2,055	...	...	
1220	Do. ...		...	Affluents	3,677	...	3,677	3,677	...	...	Do.
				Total ...	6,152	276	5,876	6,152	...	...	
				Total, Tungabhadra drain ...	6,15,271	33,520	5,81,751	6,15,271	...	...	
				Romperu drain—							
1221	No. 286 I. of 3rd Sept. 1877.	(4) B.	...	Compensation for land ...	1,000	...	1,000	1,000	...	...	
1222	Do. ...		...	Purchurvagu	500	...	500	500	...	...	
1223	No. 478 I. of 10th May 1884.		...	Karenchedu affluent	413	320	93	413	...	...	Partly paid.
1224	Do. ...		...	Sakikalva do.	680	463	217	680	...	...	
				Total ...	2,593	783	1,810	2,593	...	...	
1225	No. 286 I. of 3rd Sept. 1877.	(4) C.	5-4	Inlet No. 1 (Sakikalva dam).	1,480	...	1,480	1,480	...	...	

1226	Do. ...		7-50	Do. „ 3 (Karinchedu side drain).	1,070	...	1,070	1,070	...	...	
1227	Do. ...		8-40	Do. „ 5	1,070	...	1,070	1,070	...	...	
1228	Do. ...		10-40	Do. „ 7	1,070	...	1,070	1,070	...	...	
1229	Do. ...		12-60	Do. „ 8	1,060	...	1,060	1,060	...	...	
1230	Do. ...		14-60	Do. „ 11	1,060	...	1,060	1,060	...	...	
1231	Do. ...		16-10	Do. „ 12	1,020	...	1,020	1,020	...	...	
1232	Do. ...		19-20	Do. „ 14	1,090	...	1,090	1,090	...	...	
1233	Do. ...		19-40	Kadavakuduru bridge inlets ...	7,510	...	7,510	7,510	...	...	
1234	Do. ...		1-30	Bápatla affluent inlet ...	1,140	...	1,140	1,140	...	...	
1235	Do. ...		5-37	Do. inlet (right side) ...	1,540	...	1,540	1,540	...	...	
1236	No. 286 I. of 3rd Sept. 1877.		3-0	Do. do. do. ...	1,540	...	1,540	1,540	... ...	... ...	
1237	Do. ...		3-0	Do. do. (left side) ...	1,140	...	1,140	1,140	...	...	
				Total ...	21,790	...	21,790	21,790	...	...	
1238	No. 286 I. of 3rd Sept. 1877 and No. 15 I. of 10th Jan. 1887.	(4) L.	...	Romperu drain	77,120	2	77,118	77,120	...	...	
1239	No. 15 I. of 10th Jan. 1887.		...	Sakikalva affluent	21,000	19,075	1,925	21,000	...	...	Three-fourths of work done.
1240	No. 286 I. of 3rd Sept. 1877.		...	Bápatla do.	14,800	...	14,800	14,800	...	...	
1241	No. 478 I. of 10th May 1884.		...	Karenchedu do.	15,237	13,390	1,847	15,237	...	...	Do.
1242	No. 286 I. of 3rd Sept. 1877.		...	Purchurvagu	16,290	...	16,290	16,290	...	...	
1243	Do. ...		...	Swerna affluent	4,400	...	4,400	4,400	...	...	
1244	Do. ...		...	Alleru do.	10,870	...	10,870	10,870	...	...	
				Total ...	1,59,717	32,467	1,27,250	1,59,717	...	...	
				Total, Romperu drain ...	1,84,100	33,250	1,50,850	1,84,100	...	...	
				Total, Western Section ...	31,14,422	11,34,306	19,78,894	31,13,200	...	1,222	
1245	Do. ...		...	Unforeseen works	2,44,470	...	2,57,998	2,57,998	13,528	...	
				Total for works ...	107,30,994	59,22,355	48,08,639	107,30,994	...	...	

ABSTRACT.

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works.

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate. Expenditure incurred to end of 1887-88.	Revised Estimate. Further expenditure.	Revised Estimate. Total.	Difference. Increase.	Difference. Decrease.	Remarks
					RS.	RS.	RS.	RS.	RS.	RS.	
				Old outlay	30,81,755	30,81,755	...	30,81,755	...	...	
				Completed works	12,08,979	12,10,270	...	12,10,270	1,291	...	
				Works in progress	32,80,045	16,24,447	16,69,169	32,93,616	13,571	...	
				Works sanctioned but not commenced.	15,81,959	...	15,81,959	15,81,959	...	...	
				Works sanctioned but not required.	28,390	...	...	...	...	28,390	
				Lump sums for which detailed estimates have not yet been sanctioned.	15,49,866	5,883	15,57,511	15,63,394	13,528	...	
				Total ...	107,30,994	59,22,355	48,08,639	107,30,994	...	...	
1246	......		...	Establishment	25,07,268	14,44,436	10,62,832	25,07,268	...	...	
				Tools and Plant—							
1247	......		...	Old outlay	3,27,163	1,96,981	..	3,26,843	...	320	
				Outlay to end of 1882-83 ...	...	1,29,862					
1248	No. 655 I. of 16th July 1884.		...	Priestman's dredger	9,620	10,105	...	10,105	...	1	
1249	No. 403 I. of 29th April 1885.		...	Do.	453						
1250	No. 873 I. of 13th Oct. 1885.		...	Do.	33						
1251	No. 788 I. of 1st Sept. 1884.		...	Hand dredgers	1,600	1,643	...	1,643	43	...	
1252	No. 396 I. of 12th May 1883.		...	Ferry boats	526	526	...	526	...	...	
1253	No. 601 I. of 26th June 1884.		...	Do.	7,500	6,780	720	7,500	...	...	

1254	No. 1092 I. of 19th Dec. 1885.		...	Do.	2,500	2,409	91	2,500	...	...	
1255	No. 838 I. 3rd Dec. 1886.		...	Do.	2,100	1,101	999	2,100	...	...	
1256	No. 291 I. of 16th March 1888.		...	Do.	1,138	...	1,138	1,138	...	...	
1257	No. 296 I. of 18th March 1884.		...	Messent's concrete mixers ...	1,500	1,502	...	1,502	2	...	
1258	No. 955 I. of 23rd Oct. 1884.	}									
1259	No. 314 I. of 26th March 1885.	}	...	Stoney's surki sifters ...	325	325	...	325	...	...	
1260	No. 918 I. of 14th Oct. 1884.		...	Machinery for Bezváda Workshops.	27,470	26,542	928	27,470	...	...	
1261	No. 407 I. of 30th April 1885.		...	Pipes for centrifugal pumps...	86	65	21	86	...	...	
1262	No. 399 I. of 7th June 1886.		...	Telugu type for printing press.	755	751	4	755	...	...	
1263	No. 705 I. of 14th Nov. 1887.		...	Extra type for do. ...	1,280	1,144	136	1,280	...	..	
1264	No. 45 I. of 20th Jan. 1888.		...	Cases for types for do. ...	84	...	84	84	...	...	
1265	No. 753 I. of 15th Nov. 1886.		...	Theodolite	300	300	...	300	...	...	
1266	No. 293 I. of 23rd March 1885.		...	Scientific instruments ...	250	256	...	256	6	...	
1267	No. 524 I. of 15th June 1885.		...	Do.	300	264	36	300	...	...	
1268	No. 824 I. of 16th Oct. 1882.		...	Tools	74,940	60,468	14,472	74,940	...	...	
1269	No. 248 I. of 4th March 1884.		...	Do.	750	718	32	750	...	...	
1270	No. 800 I. of 3rd Sept. 1884.		...	Do.	1,051	1,047	4	1,051	...	...	
1271	No. 21 I. of 8th Jan. 1885.		...	Do.	340	...	340	340	...	...	
1272	No. 524 I. of 15th June 1885.		...	Do.	600	589	11	600	...	...	
1273	No. 81 I. of 27th Jan. 1886.		...	Do.	660	339	321	660	...	...	

Revised Statement showing the Estimates sanctioned, the Expenditure incurred, and the further outlay required to complete the works—*cont.*

No.	Proceedings of Madras Government.	Main and sub head.	Mileage.	Names of Works.	Amount of sanctioned Estimate.	Revised Estimate.			Difference.		Remarks.
						Expenditure incurred to end of 1887-88.	Further expenditure.	Total.	Increase.	De-crease.	
					RS.	RS.	RS.	RS.	RS.	RS.	
				Tools and Plant—*cont.*							
1274	No. 243 I. of 15th March 1886.		...	Tools	474	...	474	474	...	...	
1275	......		...	Balance of lump sum to meet future demands.	2,02,458	...	2,04,515	2,04,515	2,057	...	
				Total for Tools and Plant ...	6,66,256	4,43,717	2,24,326	6,68,043	1,787	...	
1276	......		...	Loss by exchange	20,000	9,929	10,071	20,000	...	...	
				Total ...	139,24,518	78,20,437	61,05,868	139,26,305	1,787	...	
1277	.. ...		...	Less receipts on Capital Account.	4,734	6,521	...	6,521	1,787	...	
				Net Total ...	139,19,784	78,13,916	61,05,868	139,19,784	...	...	
				Indirect Charges.							
1278	......		...	Capitalized abatement of Land Revenue.	5,52,200	2,50,543	3,01,657	5,52,200	...	...	
1279	......		...	Leave and pension allowances...	4,28,960	2,80,162	1,48,798	4,28,960	...	...	
				Total, Indirect charges ...	9,81,160	5,30,705	4,50,455	9,81,160	...	...	
				Grand Total ...	149,00,944	83,44,621	65,56,323	149,00,944	...	...	

Order—dated 1st October 1888, No. 577 I., Public Works.

The revised statement showing the expenditure incurred and the amount required for completing the Kistna delta works is approved.

2. Ordered that a copy of these Proceedings be forwarded to the Government of India with the request that the sanction to the Kistna delta completion estimates accorded by the Secretary of State in his despatch No. 9, dated 9th February 1882, which under para. 1509 of the Public Works Code expired on 9th February 1887, be extended for a further period of five years.

(Here enter No. 578 I., dated 1st October 1888.)

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

Endorsement—dated 1st October 1888, No. 578 I., Public Works.

Forwarded.

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 1st.

Recd. *Encl.*

G.O., 1st Oct. 1888, Nos. 577 I., 578 I.

OCTOBER.

Kistna Delta Works

Forwarding copy of Proceedings approving revised statement showing expenditure incurred and the amount required for completing the —, and requesting that the sanction may be extended for a further period of five years.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

From Colonel R. C. B. PEMBERTON, R.E., Secretary to the Government of India, Public Works Department (Account—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 6th August 1888, No. 75 A.I.

With reference to your endorsement No. 61 I., dated 25th January 1888, submitting a programme of tank restoration work proposed to be done during the year 1888-89, I am directed to state that the Government of India desires to be furnished, commencing with the year 1887-88, with an annual report of the work done and revenue received in connection with this scheme.

2. The information which the Government of India requires is as follows:—

(i) *Cost of investigation*—
- (*a*) during the year under report;
- (*b*) in previous years;
- (*c*) up to date.

(ii) *Cost of execution*—
- (*a*) outlay on works, including share of establishment and tools and plant during the year;
- (*b*) in previous years;
- (*c*) up to date.

(iii) *Revenue.*

The increased land revenue attributable to each of the works charged to tank restoration, an account of which is, it is understood, maintained in accordance with Finance and Commerce Department letter No. 4148, dated 5th August 1887, para. 5.

3. I am therefore to request that, after a consideration of the local circumstances affecting the matter, the form in which it is proposed to furnish this information may be submitted for the approval of the Government of India.

4. I may add that in the form to be adopted it is considered desirable that the outlay on investigation and execution should be shown by major and minor basins and that, in future, the annual programme of work to be undertaken should be so prepared as to admit of ready comparison with the report now called for.

Order—dated 1st October 1888, No. 579 I., Public Works.

Communicated to the Chief Engineer for Irrigation, who will, in communication with the Examiner of Public Works Accounts, submit as soon as possible a statement showing by minor basins the cost of investigation (this can only be shown in districts) and execution of tank restoration works (1) during and (2) to the end of 1887-88 in the accompanying form. This form, which suits the circumstances, will be submitted for the approval of the Government of India. A similar statement will in future be submitted every year on or before the 15th June. Information as to the increase of revenue due to tank restoration work before the end of 1887-88 cannot be furnished, arrangements having been made to obtain it from 1888-89 only.

2. Orders will be issued in the Revenue Department for the Chief Engineer for Irrigation being furnished with copies of the revenue statements prepared with reference to para. 4 of G.O., No. 922, Financial, dated 20th August 1887.

3. Ordered that a copy of these Proceedings be forwarded to the Government of India with reference to their letter No. 75 A.I., dated 6th August 1888.

(Here enter No. 580 I., dated 1st October 1888.)

(True Extract.)

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.
" Revenue Department.

Endorsement—dated 1st October 1888, No. 580 I., Public Works.

Forwarded.

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 1st.

Recd. *Encl.*

G.O., 1st Oct. 1888, Nos. 579, 580 I.

OCTOBER.

Tank Restoration Scheme

Forwarding copy of Proceedings passing orders on letter from the Government of India requesting to be furnished with annual report of work done and revenue received in connection with the —.

Statement showing the Work done and Revenue realised in connection with Tank Restoration Scheme during and to the end of 1887-88.

District.	Major basin.	Minor basin.	Cost of investigation			Cost of work done including Establishment and Tools and Plant charges			Number of works restored			Total area irrigated in 1887-88.		Increase of revenue for 1887-88 due to work done from the Tank Restoration grant.			Remarks.
			During 1887-88.	In previous years.	Total.	During 1887-88.	In previous years.	Total.	During 1887-88.	In previous years.	Total.	First crop.	Second crop.	Total revenue excluding remissions.	Average of five years previous to the restoration.	Net increase.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Tank Restoration Central Office.			RS.	RS.	RS.	RS.	RS.	RS.				ACRES.	ACRES.	RS.	RS.	RS.	
Madura																	
	Total ..																
Coimbatore ..																	
	Total .																
Kurnool																	
	Total ..																
Chingleput ..																	
	Total ..																
North Arcot ..																	
	Total ..																
	Grand Total ..																

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper:—

No. 145 I.

Note by the Chief Engineer for Irrigation.

The accompanying schedule of demands on Imperial funds for expenditure on Irrigation Major Works during 1889-90 is submitted for the approval of Government and transmission to the Government of India.

2. The grants proposed for 1889-90 compare as follow with the budget grants for the current year and the outlay of the past year:—

—	Proposed grant for 1889-90.	Budget grant for 1888-89.	Outlay during 1887-88.
	RS.	RS.	RS.
35. Protective Works Irrigation ...	3,50,000	2,00,000	3,35,015
42. Major Works (Working expenses).	10,75,000	10,16,000	10,65,973
49. Capital Expenditure on Public Works (not charged against Revenue).	15,75,000	16,67,000	11,17,227
Total ...	30,00,000	28,83,000	25,18,215

3. *Protective Works.*—The only project sanctioned under this head is the Rushikulya project in the Ganjam district. Work on it has been stopped this year owing to want of funds, although the progress made was more satisfactory than the work hitherto done since the commencement of the project. As already stated (*vide* Proceedings of Madras Government, No. 538 I., dated 13th September 1888) it is desirable that sufficient funds should be made available to admit of work on this project being carried on steadily and continuously till it is completed; delay in pushing on with the project must tend to considerably enhance its actual cost and be detrimental to it financially. A grant of Rs. 3½ lakhs for next year and an annual grant of Rs. 3 lakhs for every succeeding year, till the project is completed, are considered necessary. If it be not found possible to provide these sums, it would be preferable to defer further progress on the project until such time as sufficient funds can be made available, the grant proposed for next year being reduced to one lakh, which amount is required to meet payments for compensation for land and completing portions of the work begun so that they may not deteriorate while the project is in abeyance. The revised estimates prepared for this project amount to Rs. 38,32,000 for direct charges or Rs. 12,26,714 more than the amount of the original sanction. The estimates will be submitted to Government for sanction as soon as the revised forecast statements are returned by the Collector, to whom they have been sent for verification, approval and countersignature.

4. *Major Works (Working expenses).*—The current year's grant of Rs. 50,000 for maintenance and repairs in the Godávari Central division being considered inadequate to meet all requirements, a sum of Rs. 55,000 has been provided for next year. Rs. 37,810 or Rs. 3,410 more than the current year's grant have been provided for the Godávari Eastern division under Tools and Plant as the upkeep of the large floating plant of the delta, which includes several steamers and steam dredgers, renders a larger grant necessary. For the Kistna delta an increase of Rs. 2,000 has been provided under Extensions and Improvements and Rs. 7,000 under Maintenance and Repairs as the current year's grants are insufficient to meet the requirements of works in both the Eastern and Gudiváda divisions. An increase of Rs. 3,000 has been provided for the Pennér anicut system under Maintenance and Repairs to ensure a more efficient upkeep of the works. For the Sangam anicut system a sum of Rs. 9,500 or Rs. 7,500 more than the current year's grant has been provided under Extensions and Improvements as there are several minor improvements and minor channels not provided for in the project estimates to be carried out. Under Maintenance and Repairs Rs. 36,000 or Rs. 16,000 more than the current year's grant has been provided, the increase being necessary to allow of the works being kept in thorough repair. For the Cauvery delta provision has been made for proceeding with the Vadavár improvements, for completing the improvements to the Korigan channel and to the Raghoonatha Cauvery in the Tanjore division and for providing screw-gearing shutters to the Devanady dam across the Vetár in the Negapatam division. Estimates received for improving the Yeri channel in the Shiyáli taluk and for a straight cut in the Vetár near the village of Pallivilagam were returned for revision. The estimates for these works are within the Superintending Engineer's powers of sanction, the limit of which has, in G.O., No. 1350 W., dated 8th May 1888, been extended to Rs. 10,000. Rs. 6,000 have been provided for these works; Rs. 8,000 for minor extensions and improvements in the Negapatam division and a similar sum for those in the Tanjore division have been provided, the usual grant of Rs. 4,000 for the latter division being insufficient. The grant of Rs. 35,000 for maintenance and repairs in the Tanjore division has been increased to Rs. 40,000 to cover the value of reserve stone required to be kept up at the Cauvery and Vennár regulators for use in emergencies. Provision has also been made for purchasing a centrifugal pump and engine required for the Tanjore division. The increase of Rs. 3,500 provided for the Srivaikuntham anicut system under Extensions and Improvements over the current year's grant of Rs. 2,000 is required for protecting weak portions of the banks of the north main channel.

5. *Capital Expenditure on Public Works (not charged against Revenue).*—The works in the Godávari Eastern and Western divisions are approaching completion and only small works of an inexpensive character have still to be carried out. In the Godávari Central division also most of the large masonry works and much of the earthwork required to be done have been carried out, and it is proposed to give up the idea of making the Bendamurlanka canal below Indupalli weir navigable. The grant provided for the Godávari Eastern division includes Rs. 18,000 required for the new Bobberlanka lock which, though at the head of the Central delta, is to be carried out by the Executive Engineer of the Eastern division. Provision has been made for obtaining another Priestman's dredger and barge required for the Godávari delta. The grant proposed for the Kistna delta works is Rs. 19,778 more than the current year's grant, as it is expected that the works in the late Gudiváda sub-division, which has this year been reconstituted into a separate division, will now be proceeded with more satisfactorily. The Pennér anicut, the Sangam anicut and the Barúr tank projects will, it is considered, be completed next year. The grants proposed for them are in round figures the unspent balances of the estimates. The Superintending Engineer, II Circle, has not yet reported the amounts which will be realized next year by the sale of tank-bed lands in the Pennér and Sangam anicut systems. In the forecast statement of the Sangam anicut project received with the Superintending Engineer's endorsement No. 364 N.L., dated 17th July 1888, the Executive Engineer, Nellore division, entered Rs. 56,512 as the amount of receipts on account of tank-bed lands during 1889-90, but it is not probable that so large an

amount will be realized during next year. It will be preferable, therefore, to adopt a smaller amount, say Rs. 21,500, as the estimate of the probable receipts for the Sangam anicut project and Rs. 12,000 for the Pennér anicut system, the latter sum being equal to the current year's estimate. Rs. 36,852 for the Sangam anicut system and Rs. 13,494 for the Pennér anicut system will have still to be realized in future years to make up the total amounts of receipts anticipated. Until these amounts are realized and credited to the projects, the expenditure will be in excess of the estimated cost of the projects. In their letter printed with G.O., No. 596 I., dated 5th October 1887, the Government of India accorded permission to complete the Sangam anicut project works without reference to the amount expected to be realized by the sale of tank-bed lands and a similar permission may, it is suggested, be applied for also in the case of the Pennér anicut system.

Order—dated 1st October 1888, No. 581 I., Public Works.

The rough estimate of the probable requirements of the Irrigation Branch of the Public Works Department from Imperial funds as drawn up by the Chief Engineer for Irrigation is approved and will be forwarded to the Government of India with the request that permission may be accorded for completing the Pennér anicut system without reference to the amount expected to be realized by the sale of the beds of tanks rendered unnecessary by the execution of the project, it being most undesirable that the completion of the works should be deferred until the sale of the tankbeds is actually effected; this must necessarily be a work of time.

(Here enter No. 582 I., dated 1st October 1888.)

(True Extract.)

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
To Superintending Engineers.
To the Examiner, Public Works Accounts.
" Revenue Department.

Endorsement—dated 1st October 1888, No. 582 I., Public Works.

Forwarded.

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 1st.

Recd. *Encl.*

G.O., 1st Oct. 1888, Nos. 581, 582 I.

OCTOBER.

Rough Estimate of probable requirements on account of Irrigation Works for 1889-90

Forwarding the —.

Rough estimate of outlay from Imperial Funds on Irrigation Major Works during 1889-90 compared with the budget grants for 1888-89 and actual outlay during 1887-88.

—	Proposed grant for 1889-90.	Budget grant for 1888-89.	Actual outlay during 1887-88.
	RS.	RS.	RS.
35. Protective Works—			
Works	2,93,100	1,63,293	2,82,349
Establishment	52,900	32,152	33,949
Tools and Plant	4,000	4,555	18,717
Total ...	3,50,000	2,00,000	3,35,015
42. Major Works (Working expenses)—			
Extensions and Improvements	1,23,239	1,04,084	1,01,411
Maintenance and Repairs	4,82,414	4,56,298	4,90,337
Establishment	3,87,452	3,77,741	3,93,223
Tools and Plant	81,895	77,877	78,775
Refund of revenue	...	...	2,227
Total ...	10,75,000	10,16,000	10,65,973
49. Capital Expenditure on Public Works (not charged against Revenue)—			
Works	12,68,532	12,07,748	8,71,219
Establishment	2,78,751	2,61,881	1,72,224
Tools and Plant	61,217	2,21,596	84,599
Suspense account	...	..	— 712
Total ..	16,08,500	16,91,225	11,27,330
Deduct receipts on Capital account ...	33,500	24,225	10,103
Net Total ...	15,75,000	16,67,000	11,17,227
Grand Total ...	30,00,000	28,83,000	25,18,215

A.—Rough estimate of probable requirements of Irrigation Major Works for 1889-90.

Projects.	Amount of estimate.	Probable outlay to end of 1888-89.	Proposed grant for 1889-90. Works.	Repairs.	Establishment.	Tools and Plant.	Total.	Deduct receipts on Capital account.	Net Total.	Remarks and references.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	
35. Protective Works—Rushikulya project ..	26,05,286	10,04,761	2,93,100	..	52,900	4,000	3,50,000	..	3,50,000	Government of India Register No. 16 I. of 1882-83—Proceedings of Madras Government, No. 147 I., dated 13th February 1883.
42. Major Works (Working expenses)—										
Godávari delta ..	..	..	27,000	2,16,000	*1,77,190	42,810	4,63,000	..	4,63,000	
Kistna do. ..	..	..	15,000	1,72,000	1,11,197	31,803	3,30,000	..	3,30,000	
Pennér anicut ..	..	..	1,436	4,140	8,522	202	14,300	..	14,300	
Sangam do. ..	..	..	9,155	24,116	11,852	77	45,200	..	45,200	
Kurnool canal ..	..	..	20,000	† 90,000	29,235	3,095	1,42,330	..	1,42,330	
Barúr tank ..	..	..	..	1,500	345	25	1,870	..	1,870	
Cauvery delta ..	..	..	45,500	— 35,634	38,520	3,614	52,000	..	52,000	
Srivaikuntham anicut.	..	..	5,148	10,292	10,591	269	26,300	..	26,300	
Total ..	..	..	1,23,239	4,82,414	3,87,452	81,895	10,75,000	..	10,75,000	
49. Capital Expenditure on Public Works not charged against Revenue—Godávari delta ..	1,10,89,332	1,08,24,368	86,000	..	19,780	18,220	1,24,000	..	1,24,000	Government of India Register No. 3 I. of 1882-83—Proceedings of Madras Government, No. 514 I., dated 4th July 1882, and No. 854 I., dated 23rd October 1882.
Kistna do. ..	1,39,19,784	83,10,022	4,20,000	..	91,770	8,230	5,20,000	..	5,20,000	Government of India Register No. 8 I. of 1884-85—Proceedings of Madras Government, No. 862 I., dated 22nd September 1884.
Pennér anicut ..	16,12,789	16,14,565	19,000	..	4,255	245	23,500	12,000	11,500	Government of India Register No. 4 I. of 1885-86—Proceedings of Madras Government, No. 526 I., dated 19th June 1885.
Sangam do. ..	‡ 28,96,437	29,64,083	78,000	..	15,870	130	94,000	21,500	72,500	Government of India Register No. 4 I. of 1881-82—Proceedings of Madras Government, No. 352 I., dated 2nd June 1881.
Barúr tank ..	4,00,000	3,52,310	38,232	..	8,768	..	47,000	..	47,000	Government of India Register No. 11 I. of 1885-86—Proceedings of Madras Government, No. 289 I., dated 30th March 1886.
Periyár project ..	54,25,000	10,37,995	6,27,300	..	1,38,308	34,392	8,00,000	..	8,00,000	Government of India Register No. 1 I. of 1886-87—Proceedings of Madras Government, No. 386 I., dated 29th May 1886.
Total ..	..	..	12,68,532	..	2,78,751	61,217	16,08,500	33,500	15,75,000	
Grand Total ..	..	..	16,84,871	4,82,414	7,19,103	1,47,112	30,33,500	33,500	30,00,000	

* Including Rs. 10,500 the estimated cost of establishment employed in the Dowlaishweram Workshops.

† Including Rs. 10,500 provided for payment to the Telegraph Department for maintenance and supervision of the telegraph line along the canal on which no percentage charge for establishment need be calculated.

‡ Revised estimates amounting to Rs. 30,00,000 have been submitted to the Government of India (*vide* Proceedings of Madras Government, No. 393 I., dated 1st July 1887).

B.—Detail of the proposed grants for 1889-90 as compared with the budget grants for 1888-89.

Systems.	Divisions.	Capital Account. Works. 1889-90.	Capital Account. Works. 1888-89.	Capital Account. Tools and Plant. 1889-90.	Capital Account. Tools and Plant. 1888-89.	Revenue Account. Extensions and Improvements. 1889-90.	Revenue Account. Extensions and Improvements. 1888-89.	Revenue Account. Maintenance and Repairs. 1889-90.	Revenue Account. Maintenance and Repairs. 1888-89.	Revenue Account. Tools and Plant. 1889-90.	Revenue Account. Tools and Plant. 1888-89.
		RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Protective Works— Rushikulya project ..	Rushikulya division	2,93,100	1,63,293	4,000	4,555	..	..	..	..	..	..
Productive Works— Godávari delta ..	Eastern	19,000	1,187	15,220	30,576	10,000	12,000	* 81,000	* 81,000	* 37,810	* 34,400
	Central	60,000	1,12,813	500	2,000	8,000	5,000	55,000	50,000	2,000	3,000
	Western	7,000	6,000	2,500	3,500	9,000	10,000	80,000	80,000	3,000	3,000
	Total ..	86,000	1,20,000	18,220	36,076	27,000	27,000	2,16,000	2,11,000	42,810	40,460
Kistna	Eastern	1,30,000	} 2,42,050	{ 7,730	} 9,500	{ 6,000	} 8,200	{ 72,000	} 1,00,000	{ 29,803	} 30,373
	Gudiváda	1,30,000		500		4,000		35,000		500	
	Western	1,60,000	1,57,280	..	520	5,000	4,800	65,000	65,000	1,500	2,500
	Total ..	4,20,000	4,00,230	8,230	10,620	15,000	13,000	1,72,000	1,65,000	31,803	32,873
Pennér anicut ..	Nellore	19,000	50,000	245	500	5,000	5,000	18,000	15,000	202	91
	Deduct old maintenance charges ..	..		..	..	3,564	3,564	13,860	13,860	..	..
	Net ..	19,000	50,000	245	500	1,436	1,436	4,140	1,140	202	91
Sangam anicut ..	Nellore	78,000	1,05,118	130	..	9,500	2,000	36,000	20,000	77	240
	Deduct old maintenance charges ..	..	..	..	..	345	241	11,884	10,352	..	..
	Net ..	78,000	1,05,118	130	..	9,155	1,759	24,116	9,648	77	240
Kurnool canal ..	Kurnool	..	..	..	..	20,000	25,000	90,000	89,000	2,895	3,645
Barúr tank	Coimbatore	38,232	36,772	..	..	..	..	1,500	1,000	25	..
Cauvery delta ..	Tanjore	..	..	..	..	29,000	26,000	40,000	35,000	3,314	..
	Negapatam	..	..	..	..	16,500	8,000	30,000	30,000	300	379
	Total ..	..	..	..	..	45,500	34,000	70,000	65,000	3,614	379
	Deduct old maintenance charges ..	..	..	..	..	..	..	1,05,634	1,05,634	..	..
	Net Total ..	..	..	..	..	45,500	34,000	— 35,634	— 40,634	3,614	379
Srívaikuntham anicut ..	Tinnevelly	..	..	..	..	5,500	2,000	15,500	15,000	269	189
	Deduct old maintenance charges ..	..	..	..	..	352	352	5,208	5,208	..	..
	Net ..	..	..	..	..	5,148	1,648	10,292	9,792	269	189
Periyár project ..	No. 1	2,61,200	3,72,710	29,392	1,70,000	..	..	..	..	..	..
	„ 2	3,66,100	1,14,200	5,000	5,000	..	..	..	..	..	..
	Total ..	6,27,300	4,86,910	34,392	1,75,000	..	..	..	..	..	..
	Total for Productive Works ..	12,68,532	13,62,423	61,217	2,26,151	1,23,239	1,04,084	4,82,414	4,56,298	81,695	77,877

* Including the amounts required for the Dowlaishweram Workshops.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

Report to accompany the estimate for the restoration of Kurichi anicut channel of Nóyil river group in Upper Nóyil Minor Basin.

General.—This channel is the 4th offtake from the Nóyil ; its head is situated on the right bank of that river about 2 miles above Coimbatore.

2. *Source of supply.*—The drainage area of the river above the head of this channel is 154 square miles and the calculated maximum discharge from it 8,610 cubic feet per second (C being taken as 300 in the formula $D = C.M. \frac{2}{3}$). The supply passed down the channel varies from 18 to 232 cubic feet per second during the cultivation season.

3. *Bench-mark.*—Mile and furlong stones as well as parts of masonry sluice have been utilized for bench-marks.

4. *Head-works.*—Immediately below the head of this channel an anicut has been constructed obliquely across the river for a length of 238 feet from left bank. Being entirely of dry rough stone with neither face nor retaining wall, it leaks and its crest being uneven, water escapes over it before a sufficient quantity has been diverted into the channel for the storage of the tank. It is therefore proposed to remove the present anicut entirely and construct a new one at right angle to stream (*vide* sketch-map attached) in accordance with the accompanying plan and sections. The anicut between the wings will be 150 feet long in the clear, but it will be extended into the cocoanut tope on the left for a further length of 91 feet, the crest of the extension being 1 foot above crest of anicut. The right wing of the existing sand sluice will be demolished and reconstructed as per section C.C. so as to serve as right wing to the anicut ; the left wing will be extended by 20 feet as per section D.D. and the bund beyond will be revetted for a further length of 20 feet. The anicut will be of rough stone in surki mortar, the stones of the old anicut being sufficient will be used in the new construction.

5. *Channel head.*—A head sluice of 3 vents each $6' \times 4'$ and sand sluice of one vent were built at the head of this channel about four years ago. The head sluice is capable of discharging 252 cubic feet per second when water level in the river is at the crest of anicut. The accompanying estimate provides for the necessary petty repairs.

6. *Section channel and bedfall.*—This is based upon the calculation that the tank fed by the channel should be filled in three days during floods when the distributaries are closed. Bottom width of channel will be 15 feet, depth of flow 4 feet, side slopes 1 to 1 in cutting and $1\frac{1}{2}$ to 1 in embankment. Fall will be 3·60′ per mile and dropped by means of a drop wall proposed to be built at 5,112 feet on the longitudinal section as per accompanying drawing.

7. *Main channel.*—The length of main channel is 2 miles 540 feet. It is thickly overgrown with jungle and prickly-pear which will be removed and destroyed before earthwork is commenced. The bank where low will be raised to 3 feet above M.W.L., that is $4\frac{1}{2}$ feet above F.S.L. ; below cross section No. 36 the top of bank wherever necessary will be raised to 160·54 or 3 feet above M.W.L. of the tank, as the water in the tank when full will back up in the channel. About a furlong below the head, the bank is much eroded by freshes in the river, and will be properly strengthened and protected by planting nanal and wild canes.

8. *Acreage and distributary channels.*—The direct cultivation under the channel is 56·67 acres. The total irrigation under this and the tank supplied by it is 444·67 acres. There are four distributary channels for direct irrigation; all are provided with sluices. The retaining walls of the first three sluices will be raised where required to suit the proposed slope of bank. They will be provided with vent stones having an opening of 3″ × 4″, 3″ × 4″, and 5″ × 7″, respectively. The sluice across the distributary No. 4 will be blocked up as it is not used for irrigation.

9. *Masonry works along the channel.*—Near the first mile there is a masonry weir of 47 feet in length with a scouring sluice of 2 vents of 3 feet span. Body and wing walls will be raised and rear returns added to the wings and other repairs carried out as per details of estimate. At the end of 2nd mile there is a road culvert of 16 feet span under which the channel is carried across the road.

10. *Cross-drainage.*—The channel intercepts a cross-drainage of 1·18 square miles. The maximum flood discharge from this is disposed of by means of the surplus weir already referred to.

(Signed) C. H. T. NORFOR,
Executive Engineer, No. IV Party.

Report to accompany the estimate for the repairs of No. 10, Irrigation work.

KURICHI TANK.

General.—This is the principal irrigation work of the village of Kurichi and commands an ayacut of about 400 acres. Owing to the leaky state of the anicut below the head of the channel which supplies this important tank, it appears that the tank did not fill during the past two years. Even the water that was available did not last the time it should have lasted as the sluices are unprovided with any means of regulation; hence there were considerable remissions in the two preceding years. Even this year while all the neighbouring tanks filled and discharged during the rains of November last, the water in this tank did not rise even to the bottom of revetment, which is 6 feet below F.S.L. All the lands under the tank excepting 50 acres which have wells for them are now lying waste for want of water, and a remission of probably Rs. 1,500 will have to be granted at the end of this fasli.

2. *Tank-bund.*—Portion of bund from north end up to commencement of road will be raised and strengthened as per sections accompanying the estimate. The height above M.W.L. will be 3 feet from C.S. 1 to C.S. 11 and $4\frac{1}{2}$ feet above M.W.L. from C.S. 11 to C.S. 17. It will have a uniform top width of 6 feet and side slopes $1\frac{1}{2}$ to 1 on both sides.

3. The height of the roadway from C.S. 17 to south end of tank varies from $1\frac{1}{2}$ to $3\frac{1}{2}$ feet above M.W.L. It is considered that it should not be left as it is, as the tank is subject to the influence of monsoon winds, and waves beat on the road, where low, much to the detriment of the tank-bund and inconvenience of passengers and carts passing over it. This added to the accidents that occur now and then to the carts and passengers has led the Local Fund department to erect mud walls which are at present washed away for a greater portion of their length. It is therefore necessary that the Local Fund department should have the road raised to the standard height or build a permanent wall of rough stone in chunam in place of the present mud wall.

4. *Revetment.*—The existing revetment except a few isolated portions requiring repacking is in good order, but overgrown with prickly-pear here and there. Provision is made in the estimate for rooting out the prickly-pear and repacking the revetment where necessary.

5. *Surplus arrangement.*—The existing weir, which is 40 feet long, is insufficient to dispose of the whole surplus of the tank; it will therefore be extended by 30 feet as per plan accompanying.

6. *Irrigation sluice.*—The tank has five sluices, of which sluices Nos. 1, 2 and 3 will be provided with new heads as per plan and sections accompanying. Sluice No. 4 will be provided with a lower vent stone having an opening of 4″ × 4″. It

already has needle shutters. Sluice No. 5 is a private one built by a ryot to irrigate a few acres of his dry lands and is provided with shutters.

All work is to be carried out in strict accordance with the paras. of the standard specification.

(Signed) C. H. T. NORFOR,
Executive Engineer, No. IV Party.

No. 146 I.

Submitted to Government with a recommendation that the estimate for restoring and improving the Kurichi anicut channel and tank, amounting to Rs. 9,920, may be sanctioned, the whole of the proposed outlay being classed under "Original Works" in accordance with para. 909 of the Public Works Code.

2. The ayacut area under the channel and tank is 444 acres and the assessment amounts to Rs. 2,963. The average cultivation during the past five years was 444 acres and the average revenue Rs. 2,432. After the improvements are carried out it is anticipated that a revenue of Rs. 2,620 will be derived, the difference between the assessment and the expected revenue being accounted for by *inam* lands on which the assessment actually realized is very small.

3. The attention of the Local Fund Board should be called to the requirements of that portion of the bund which is used as a road (*vide* para. 3 of the report of the Kurichi tank).

OOTACAMUND, (Signed) H. R. MEAD, Colonel, R.E.,
28th September 1888. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 3rd October 1888, No. 583 I., Public Works.

The following estimate, amounting to Rs. 9,920, for restoring and improving the Kurichi anicut channel and tank in the Upper Nóyil Minor Basin is sanctioned :—

Irrigation.
43. Minor Works and Navigation.
Irrigation and Navigation.
Works for which neither Capital nor Revenue Accounts are kept.
Coimbatore Division.
Upper Nóyil Minor Basin.
Original Works.

	RS.
Restoring and improving the Kurichi anicut channel and tank, estimate ...	9,920

2. This sanction has been registered as No. 94 I. of 1888-89.

(True Extract.)

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation, with three enclosures.
" Superintending Engineer, IV Circle.
" Examiner, Public Works Accounts, with duplicate general abstract estimate.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 3rd.

Recd. *Encl.*

G.O., 3rd Oct. 1888, No. 583 I.

OCTOBER.

Kurichi Anicut Channel and Tank in the Upper Noyil Minor Basin, Coimbatore District

Estimate for restoring and improving the —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 20th September 1888, No. 206 B.C.

As the lump sum of Rs. 830 placed at the disposal of the Executive Engineer, Buckingham Canal division, in G.O., No. 943 I., of the 6th November 1885, under Tools and Plant—Capital Account of the Buckingham canal has been nearly worked out, the balance on this date being only Rs. 47, I have the honor to request you will be good enough to place a further sum of Rs. 1,000 at his disposal to meet minor sanctions that may be accorded by him from the balance available under Tools and Plant, which is Rs. 10,841 (*vide* G.O., No. 508 I., of the 29th August 1888).

ORDER—dated 3rd October 1888, No. 584 I., Public Works.

Under para. 2 of the Resolution of the Government of India printed with G.O., No. 425, dated 13th February 1872, Rs. 1,000 are placed at the disposal of the Executive Engineer of the Buckingham canal out of the balance now available of the lump sum provision made in the completion estimates for the canal for tools and plant, which will then be reduced to Rs. 9,841.

(True Extract.)

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, II Circle.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 3rd.

Recd. *Encl.*

G.O., 3rd Oct. 1888, No. 584 I.

OCTOBER.

Tools and Plant

Rs. 1,000 placed at the disposal of the Executive Engineer, Buckingham canal, on account of —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ--the following paper :—

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 20th September 1888, No. 549 N.L.

I have the honor to bring to your notice that the Collector of Nellore sent in an award statement for Rs. 741 for loss of produce for three faslis—1295, 1296 and 1297—on acres 89·10 in the Manulapudi shrotriem lands, which were alleged to have been submerged and rendered unfit for cultivation by the action of this department in 1871. The sanction for payment of Rs. 2,717 accorded in G.O., No. 23 I., of the 12th January 1888, is for loss of produce on this land for eleven years to end of fasli 1294. The rate sanctioned for each of the eleven years is adopted for the three years now billed for I request, therefore, you will be good enough to authorize the payment of Rs. 741 from the current year's grant of the Nellore division under Repairs to Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.

2. The above claim, though within my powers of sanction, is submitted for the sanction of Government as the former claim was sanctioned by Government.

3. I beg to enclose a copy of the Division officer's letter forwarding the award statement.

ENCLOSURE.

From A. A. G. MALET, Esq., Executive Engineer of Nellore, to the Superintending Engineer, II Circle, dated 10th September 1888, No. 285.

I have the honor to forward herewith a compensation bill for Rs. 741 for loss of produce for three faslis, viz., 1295, 1296 and 1297, on the 89·10 acres in the Manulapudi shrotriem lands, which were alleged to have been submerged and rendered unfit for cultivation by the action of this department in 1871. Compensation (Rs. 2,717) for loss of produce on this land up to fasli 1295 was paid from the current year's grant of this division for Repairs to Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept (*vide* sanction accorded in G.O., No. 23 I., of 12th January 1888).

2. The present claim is in continuation of the above and for the same land.

3. I request that you will be pleased to obtain sanction for the above sum, Rs. 741, to be paid under the above grant.

4. Compensation for this and other lands in the above shrotriem acquired for Kanigiri reservior have already been paid, and this will completely settle the claims for lands of the shrotriemdars.

5. The present claim should not be charged against Capital account, Sangam project.

Order—dated 8th October 1888, No. 594 I., Public Works.

The payment of Rs. 741 for loss of produce is sanctioned, the amount being debited against the current year's grant of the Nellore division under Repairs to Irrigation and Navigation Works for which neither Capital nor Revenue Accounts are kept.

(True Extract.)

(Signed) H. R. MEAD, Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 8th.

Recd. *Encl.*

G.O., 8th Oct. 1888, No. 594 I.

OCTOBER.

Compensation

Payment of — on account of loss of produce caused by the Manulapudi shrotriem lands in the Nellore district being submerged, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper:—

From Colonel H. M. VIBART, R.E., Superintending Engineer, V Circle, to the Chief Engineer for Irrigation, dated Bangalore, 3rd July 1888, No. 1416.

I have the honor to submit, for sanction, a statement of deviations in the improvements of Striputhur tank, one of the storage works of the Pelandorai anicut system in South Arcot division. There is a saving of Rs. 225 in the estimate of Rs. 7,455 sanctioned in G.O., No. 373 I., dated 25th May 1886, for the work for the reasons explained in the enclosed statement.

ORDER—dated 10th October 1888, No. 596 I., Public Works.

The deviation statement for improvements to the Striputhur tank of the Pelandorai anicut system is sanctioned, the saving of Rs. 225 effected by the deviation in the revised estimate sanctioned in G.O., No. 373 I., dated 25th May 1886, being added to the balance of the amount reserved for unforeseen works, which will then be increased to Rs. 603.

2. This sanction has been registered as No. 96 I. of 1888-89.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, V Circle.
,, Examiner, Public Works Accounts,
with deviation statement.
,, Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 10th.

Recd. *Encl.*

G.O., 10th Oct. 1888, No. 596 I.

OCTOBER.

Striputhur Tank, Pelandorai Anicut System

Deviation statement for improvements to the —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From Colonel J. PENNYCUICK, R.E., Superintending Engineer, Periyár Project Works, to the Chief Engineer for Irrigation, dated Ammayanáyakanúr, 21st September 1888, No. 751 P.R.

I have the honor to forward herewith an estimate, amounting to Rs. 1,912, for constructing a rest-house for No. II, Periyár division, for sanction from the provision of Rs. 10,000 in estimate for buildings under Main canals and branches.

2 The site selected by myself in company with the Executive Engineer is close to the point where the line of the channel crosses the road from Ammayanáyakanúr to Sholavandan; it is about midway between the two places named and seven miles from the channel head at the Peranai. It will thus be a very central and convenient position for the next three years, during which the whole of the work will be within ten miles of this point.

3. The building is very urgently required, the difficulties of conveyance of tents especially during wet weather being considerable. I have therefore authorized the commencement of the work in anticipation of sanction.

ORDER—dated 10th October 1888, No. 597 I., Public Works.

The following estimate is sanctioned from the provision of Rs. 10,000 made in the estimate of the Periyár Project Works for buildings under Main canals and branches, which will then be reduced to Rs. 8,088 :—

Imperial.
Capital Expenditure on Public Works (not charged against Revenue).
49. Irrigation.
Periyár Project.
(1) Head Works.
K. Buildings.

	RS.
Constructing a rest-house for No. II, Periyár division, near Natchikulam, estimate	1,912

2. This sanction has been registered as No. 97 I. of 1888-89.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, Periyár Project Works,
with five enclosures.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 10th.

Recd. *Encl.*

G.O., 10th Oct. 1888, No. 597 I.

OCTOBER.

Rest-house for No. II, Periyar Division.

Estimate for —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers:—

From G. T. WALCH, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 4th September 1888, No. 1571 G.D.

I have the honor to enclose copy of letter No. 240, dated 27th August 1888, from the Executive Engineer, Western division.

2. The work referred to is that sanctioned in G.O., No. 272, dated 8th May 1888, for which Rs. 7,000 have been provided in this year as shown in G.O., No. 433 I., dated 25th July 1888.

3. Rs. 11,800 required for completion of the work will be entered in the budget estimate, which will be shortly sent in.

4. I have the honor to ask whether it may be assumed to be certain that that sum, or portion of it, will be available for payment in next April.

5. Of course I should be glad to get the funds in this official year if possible.

Enclosure.

From W. C. deMORGAN, Esq., Executive Engineer, Godávari Western Division, to the Superintending Engineer, I Circle, dated 27th August 1888, No. 240.

I have the honor to bring to your notice that the current year's grant for raising the river bank from Prakkilanka to Polavaram is Rs. 7,000. The estimate is Rs. 18,000..

2. The contractor, Mr. W. M. Clarke, has a large gang of buntadars at his disposal and is desirous of keeping them employed. He has therefore expressed his willingness to complete the work and receive payment when the balance of the estimate is allotted.

3. It would not be advisable to accede to his request unless some guarantee were obtained from Government that the whole or part of the balance would be available for expenditure next year.

4. It would be satisfactory, I think, to all parties if the raising work were completed without any break in the progress, and I have therefore the honor to suggest that Government should be addressed with a view to ascertaining whether they are prepared to guarantee the whole or any part of the balance of the estimate for expenditure next year.

5. Unless such a guarantee is given, I have directed the contractor to restrict the value of his outturn to Rs. 7,000.

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 13th September 1888, No. 195 B.C.

I have the honor to forward herewith, for your approval and sanction of Government, an application for modification of irrigation allotments for the year 1888-89 of the Buckingham Canal division. Modifications to the extent of Rs. 23,050 are required. The necessity for these modifications is explained in the remarks column of the enclosed statement. The total grant for the division, viz., Rs. 1,75,000 remains unaltered.

ENCLOSURE.

BUCKINGHAM CANAL DIVISION.

APPLICATION for modification of Irrigation allotments for the year 1888-89.

Division.	Main and sub heads.	Name of work.	Existing grant.	Modification of allotments.		Remarks.
				Reduction.	Increase.	
1	2	3	4	5	6	7
			RS.	RS.	RS.	
Buckingham Canal.	Main canals and branches—G. Bridges.	Constructing a wooden bridge between the village of Kuppam and Panayur.	..	..	850	The modification of allotments here proposed is rendered necessary by the present state of progress of the various works. Last official year I was given to understand that there was a strong probability of the original grant for the canal being considerably increased, and I had to arrange for the execution of work so as to be able to utilise the extra grant if made. After all, the extra grant was not made, and at the close of the official year it was found that some arrears had to be paid off. Provision has also to be now made for turfing some of the improvements undertaken last year in the northern sub-division, the execution of which cannot be deferred. The modified allotments are made to accord with the existing grant for the canal, but works in progress, especially three flood-gates, will be seriously delayed for want of funds, and it is hoped that some more money, Rs. 20,000 at least, may eventually be made available for expenditure.
	Main canals and branches—K. Buildings.	Constructing rest-house at Mahabalipuram.	5,700	..	..	
	Main canals and branches—L. Earthwork.	Diversion of canal from 15/11 to 31/11th mile.	5,500	..	..	
	Do. ..	Diversion of canal from 8/IV to 15/1 mile.	..	..	2,500	
	Do. ..	Improvements to canal diversion and flood banks to Pálár.	..	..	1,250	
	Do. ..	Improvements to canal from Adyar to 8th mile.	7,500	..	1,000	
	Main canals and branches—G. Bridges.	Improvements and alterations to Washermanpet bridge.	4,000	..	..	
	..	Improvements and alterations to Trivettur bridge.	4,000	3,500	..	
	Main canals and branches—I. Navigation works.	Constructing flood-gate north bank of Ennore backwater.	..	..	2,000	
	Do. ..	Constructing flood-gate south bank of Chintamony backwater.	15,050	1,750	..	
	Main canals and branches—L. Earthwork.	Diversion of canal from Ennore to Chintamony backwater.	25,450	..	..	
	Main canals and branches—K. Buildings.	Constructing outhouses to 1st-class Inspection bungalow at Coromandel.	500	..	..	
	Main canals and branches—L. Earthwork.	Diversion of canal from Coromandel to Tettupett.	6,000	..	..	
	Do. ..	Diversion of canal from 74/2½ to 78th mile at Surnamuky.	8,000	1,500	..	
	Main canals and branches—I. Navigation works.	Constructing flood-gate north bank of Surnamuky river.	20,000	5,000	..	
	Main canals and branches—L. Earthwork.	Diversion of canal in 101 mile and cutting a drainage channel.	500	..	500	
	F (1). Other cross drainage works.	Constructing a culvert on Nellore road near Mypaud wharf.	225	..	100	
	I. Navigation work.	Siding basin and wharf at Mypaud..	..	..	700	
	Do. ..	Constructing flood-gate north bank of Pennair.	20,000	2,000	..	
	L. Earthwork..	Constructing left flood-bank to Pennair.	10,000	..	..	
	Do. ..	Diversion of canal at Pennair through large island.	10,000	4,000	..	
	Do. ..	Diversion of canal from 122/6½ to 123/5 mile.	..	..	300	
	Do. ..	Diversion of canal from 123/VI to 126/VII mile.	8,000	2,000	..	
	Do. ..	Diversion of canal from 131/VII to 132/5 mile.	1,000	..	..	
	Do. ..	Diversion of canal from 132/V to 134/3 mile.	1,000	..	..	
	F (1) Other cross drainage works.	Constructing two outlets of 10 vents at 132/6 mile.	500	..	..	
	L. Earthwork	Improvements to canal 151 to 159th mile.	625	..	..	
	Do. ..	Manner northern diversion 160 to 162/VI mile.	10,000	1,500	..	
	I. Navigation works.	Constructing flood-gate south bank of Manner.	2,000	1,800	..	

Application for modification of Irrigation allotments for the year 1888-89—*cont.*

Division.	Main and sub heads.	Name of work.	Existing grant.	Modification of allotments. Reduction.	Modification of allotments. Increase.	Remarks.
1	2	3	4	5	6	7
			RS.	RS.	RS.	
Buckingham Canal—*cont.*	L. Earthwork ..	Improvements of canal from 162/VI to 168/II mile.	2,000	..	3,000	
	F (1). Other cross drainage works.	Constructing a double outlet in 166th mile.	4,450	..	..	
	L. Earthwork ..	Improvements to canal 169th to 177th mile.	..	..	350	
	Do. ..	Improvements to canal 177th to 183rd mile.	1,000	..	2,000	
	Do. ..	Improvements to canal 187th to 190th mile.	2,000	..	7,000	
	Do. ..	Improvements to canal 191st to 194th mile.	..	..	1,500	
		Total ..	1,75,000	23,050	23,050	

(Signed) C. VINCENT,
Executive Engineer,
Buckingham Canal Division.

28th August 1888.

Order—dated 10th October 1888, No. 599 I., Public Works.

The modifications of allotments for works on the Buckingham canal proposed by the Superintending Engineer, II Circle, and the following transfers of funds are sanctioned :—

Provincial, 43. Minor Works and Navigation.

From	RS.	*To*		RS.
Irrigation and Navigation Works for which Capital and Revenue Accounts are kept.		Irrigation and Navigation Works for which Capital and Revenue Accounts are kept. Capital Account. Buckingham Canal.		
Reserve (*vide* G.Os., No. 516 I., dated 1st Sept. 1888, and No. 557 I., dated 21st Sept. 1888)	30,203	Works	18,000	
		Establishment	4,140	
				22,140
		Agricultural Works. River Embankments. Godávari Western Division.		
		Godávari river bank from Prakkilanka to Polavaram raising	6,476	
		Establishment	1,490	
		Tools and Plant	97	
				8,063
Total ...	30,203	Total ...		30,203

2. The Superintending Engineer, II Circle, will, in due course, submit a statement showing the distribution by component works of the additional grant of Rs. 18,000 now sanctioned for works on the Buckingham canal.

3. The Superintending Engineer, I Circle, will report if any, and if so, what, further additional allotment will be required for raising the Godávari river bank from Prakkilanka to Polavaram in the Godávari Western division.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" " II "
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 10th.

Recd. *Encl.*

G.O., 10th Oct. 1888, No. 599 I.

OCTOBER.

Buckingham Canal

Orders on application from the Superintending Engineer, II Circle, for modification of allotments for works on the —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper:—

No. 150 I.

Note by the Chief Engineer for Irrigation.

The following drawings connected with the Srívaikuntham anicut system are submitted for transmission to the Government of India, with reference to their letter No. 5 I., dated 7th January 1884, printed in Proceedings of Madras Government, No. 264 I., dated 10th March 1884:—

General.

(1) Sketch-map of the Srívaikuntham anicut system.
(2) Plan showing the position of anicut and head works, together with chart of river taken in 1882.
(3) Diagram of the Tambrapurni river at the Srívaikuntham anicut.
(4) Plan of anicut and head-sluices.

Northern Section.

(5) Plan of head-sluice to north main channel.
(6) Longitudinal and cross sections of north main channel.
(7) Plan of syphon sluice at Yeral.
(8) Plan of outlet at 8 miles 60 chains of north main channel.
(9) Plan of road bridge at Palayakayel.
(10) Plan of Uppaur Odai dam in Korampallam tank.

Southern Section.

(11) Plan of head-sluice to south main channel.
(12) Longitudinal and cross sections of south main channel.
(13) Plan of aqueduct across south main channel at Athinathapuram village.
(14) Bridge over south main channel east of Alwar, Tinnevelly.

(Signed) G. T. WALCH,
Ag. Chief Engineer for Irrigation.

9th October 1888.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 11th October 1888, No. 601 I., Public Works.

The drawings of the Srívaikuntham anicut system, submitted by the Chief Engineer for Irrigation, will be forwarded to the Government of India.

(Here enter No. 602 I., dated 11th October 1888.)

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.

ENDORSEMENT—dated 11th October 1888, No. 602 I., Public Works.

Forwarded.

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.

Govt. of (1888) Madras.

PUBLIC WORKS.

Dated October, 11th.

Recd. *Encl.*

G.O., 11th Oct. 1888, Nos. 601 I., 602 I.

OCTOBER.

Srivaikuntham Anicut System

Forwarding drawings of the —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

No. 148 I.

Note by the Chief Engineer for Irrigation.

The following drawings connected with the Cauvery delta are submitted for transmission to the Government of India, with reference to their letter No. 5 I., dated 7th January 1884, printed in Proceedings of Madras Government, No. 264 I., dated 10th March 1884 :—

(1) Sketch-map of the Cauvery delta.
(2) Plan showing the position of the Cauvery dam and Upper Coleroon anicut, together with chart of river taken in 1880 for one mile above and below the Cauvery dam.
(3) Plan of the Upper Coleroon anicut.
(4) Plan of the dam across the Cauvery river at the head of Srírangam.
(5) Diagram of the Cauvery river at the Upper Coleroon anicut.
(6) Plan showing the position of the Grand anicut and the Cauvery and Vennár regulators.
(7) Plan of the Grand anicut.
(8) Plan of iron falling shutter of Grand anicut.
(9) Section of do. do.
(10) Details of do. do.
(11) Section of Cauvery river showing borings taken in 1883 at site of new regulator at Grand anicut.
(12) Longitudinal and cross sections of Vennár new head.
(13) Plan showing the embankment at the left end of the Cauvery regulator.
(14) Plan of the Cauvery and Vennár regulators.
(15) Detailed drawing of principal portions of the Cauvery and Vennár regulators.
(16) Detailed drawing of screw gear and shutter for the Cauvery regulator.
(17) Do. do. Vennár do.
(18) Plan of syphon across the Vennár new cut.
(19) Plan of Covilady calingulah and bridge.
(20) Plan of under-sluices at Vadavagudi.
(21) Plan of surplus sluice in the Cauvery left bank.

OOTACAMUND, (Signed) H. R. MEAD, Colonel, R.E.,
2nd October 1888. Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 11th October 1888, No. 603 I., Public Works.

The drawings of the Cauvery delta, submitted by the Chief Engineer for Irrigation, will be forwarded to the Government of India.

(Here enter No. 604 I., dated 11th October 1888.)

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.

ENDORSEMENT—dated 11th October 1888, No. 604 I., Public Works.

Forwarded.

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 11th.

Recd. *Encl.*

G.O., 11th Oct. 1888, Nos. 603 I., 604 I.

OCTOBER.

Cauvery Delta

Forwarding drawings of the —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers :—

From Colonel R. C. B. PEMBERTON, R.E., Secretary to the Government of India, Public Works Department (Account—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 4th August 1888, No. 74 A.I.

I am directed to invite the attention of His Excellency the Governor of Madras to the enclosed statement showing the irregular outlay incurred in the Madras Public Works Department to the end of April 1888 : it will be observed that the irregularities as to estimate have considerably increased of late ; several of the items have been outstandin g for a considerable period of time.

2. I am to request that the Government of India may be informed what measures have been or are being adopted to regularise the objectionable outlay.

3. I am also to point out that the sanctions for the Godávari, Kistna and Sangam anicut systems have expired and, under Public Works Code, volume II, chapter XV, para. 162, require to be renewed.

Enclosure.

—	Irregularities as to estimate.					Irregularities as to appropriation.					Miscellaneous irregularities.		
	No estimates.		Excess over estimates.			No appropriation.		Excess over appropriation.			Works for which revised estimates will likely be required.		
	Number of works.	Amount expended.	Number of works.	Amount of estimate.	Excess expenditure.	Number of works.	Amount expended.	Number of works.	Amount of appropriation.	Excess over appropriation.	Number of works.	Amount of estimate.	Outlay to date.
		RS.		RS.	RS.		RS.		RS.	RS.		RS.	RS.
February 1888 ..	56	79,630	70	14,66,285	1,26,699	16	26,382	22	2,45,103	55,875	48	17,79,282	11,20,793
March ,, ..	73	91,623	98	18,02,226	1,98,334	13	21,569	46	8,65,044	1,30,559	43	17,26,223	10,61,089
April ,, ..	78	93,144	91	18,39,356	1,93,999	4	4,528	1	2,000	1,523	39	16,88,414	10,50,274

Office note from the Examiner, Public Works Accounts, dated Madras, 21st September 1888, No. 2282.

[Your office note No. 174, dated 15th August 1888.]

Statements of objectionable items for April 1888 were furnished to you (in duplicate) as usual.

2. With regard to what has been done to regularise the objectionable items, the grounds of objection have of course been since removed in some cases, but other items have been introduced and the statement for June 1888 shows, under every head, even worse results than that for April, so that it cannot be said that anything has been done to bring about a better state of things. The accompanying statement A compares the results for April and June 1888.

3. The divisions which chiefly contribute to this result are the Nellore, Kistna Eastern, Godávari Central and Rushikulya divisions, as will be seen from the more detailed information given in the accompanying table B.

4. I do not know of any good reason why objections should be allowed to remain for such great length of time.

ENCLOSURES.

A.—Statement comparing irregular outlay in April 1888 with that in June 1888.

Class of irregularity.	April 1888.		June 1888.		Increase.	
	Number of work.	Irregular outlay.	Number of work.	Irregular outlay.	Number of work.	Irregular outlay.
1	2	3	4	5	6	7
		RS.		RS.		RS.
No estimate	78	93,144	83	2,22,808	5	1,29,664
Excess over estimate	91	1,93,999	79	2,17,612	—12	23,613
No appropriation	4	4,528	12	12,534	8	8,006
Excess over appropriation	1	1,523	8	12,949	7	11,426
Works for which revised estimates are required ..	39	10,50,274	39	11,01,285	..	51,011

B.—Statement showing number of works outstanding (as per objectionable items statement for June 1888) in the particularly bad divisions and how long items are unremedied.

Division, class of irregularity and number of works.	How long outstanding.	Irregular outlay.
1	2	3
NELLORE DIVISION.		RS.
"No Estimate."		
Total 5 works ..	....	2,608
1 work ..	Over 18 months.	
1 do. ..	Do. 6 do.	
3 works ..	Below 6 do.	
"Excess over Estimate."		
Total 20 works ..	....	1,00,408
1 work ..	Over 30 months.	
5 works ..	Do. 2 years.	
5 do. ..	Do. 6 months.	
9 do. ..	Below 6 do.	
"Want of Revised Estimate."		
Total 10 works ..	....	..
3 works ..	Over 2 years.	
1 work ..	Do. 18 months.	
1 do. ..	Do. 1 year.	
5 works ..	Below 6 months.	
KISTNA EASTERN DIVISION.		
"No Estimate."		
Total 23 works ..	....	26,393
4 works ..	Over 2 years.	
3 do. ..	Do. 18 months.	
1 work ..	Do. 1 year.	
3 works ..	Do. 6 months.	
12 do. ..	Below 6 do.	
"Excess over Estimate."		
Total 6 works ..	....	5,783
2 works ..	Over 1 year.	
2 do. ..	Do. 6 months.	
2 do. ..	Below 6 do.	
KISTNA EASTERN DIVISION.—*cont.*		RS.
"Want of Revised Estimate."		
Total 2 works ..	....	..
1 work ..	Over 1 year.	
1 do. ..	Do. 6 months.	
GODAVARI CENTRAL DIVISION.		
"No Estimate."		
Total 9 works ..	Below 3 months ..	17,778
"Excess over Estimate."		
Total 15 works ..	....	7,648
1 work ..	Over 2 years.	
2 works ..	Do. 1 year.	
2 do. ..	Do. 6 months.	
10 do. ..	Below 6 do.	
"Want of Revised Estimate."		
Total 4 works ..	....	..
1 work ..	Over 1 year.	
3 works ..	Below 6 months.	
RUSHIKULYA DIVISION.		
"No Estimate."		
Total 3 works ..	....	1,734
1 work ..	Over 18 months.	
1 do. ..	Do. 1 year.	
1 do. ..	Do. 6 months.	
"Excess over Estimate."		
Total 6 works ..	Below 6 months ..	27,869
"Want of Revised Estimate."		
Total 16 works ..	....	..
1 work ..	Over 2 years.	
1 do. ..	Do. 1 year.	
9 works ..	Do. 6 months.	
5 do. ..	Below 6 do.	

(Signed) C. H. P. CHRISTIE, Major, R.E.,
Examiner, Public Works Accounts.

Order—dated 15th October 1888, No. 606 I., Public Works.

It is observed that more than half the number of objectionable items occurred in the four divisions noted in the margin.

Rushikulya.	Kistna Eastern.
Godávari Central.	Nellore.

2. The irregular expenditure in the Rushikulya division is due to the necessity for revising the estimates sanctioned for the Rushikulya project. Revised estimates for this project have been prepared, but their submission for the sanction of the Government of India has hitherto been delayed owing to the revised forecast statements of revenue and expenditure sent to the Collector for verification and countersignature having only just been returned. The revised estimates will be submitted shortly.

3. The number of objectionable items in the Nellore division is large as sanction to the revised estimates submitted to the Government of India with Proceedings of Madras Government, No. 393 I., dated 1st July 1887, has been deferred pending the submission of revised forecast statements for the project. The preparation of these statements is delayed for want of revenue information. Orders have already been issued in the Revenue Department directing the Collector to expedite the submission of this information and, as soon as it is received, revised forecast statements will be prepared and submitted to the Government of India.

4. The large number of objectionable items in the other two divisions, though apparently not creditable to the officers concerned, is to a great extent due to insufficient establishment and constant changes in the *personnel* of this establishment.

5. With a view to expediting sanction to estimates, the senior Superintending Engineers have been vested with increased powers of sanction, and they will now be directed to take such steps as may be necessary to reduce the number of objectionable items at present existing, and to see that in future irregular expenditure is only permitted in those cases the emergency of which makes it incumbent in the interests of Government to carry out work in anticipation of sanction to estimates and of allotment of funds. Such cases will necessarily be few in number.

6. With reference to para. 2 of the Government of India letter it may be noted that an application for extending the period of sanction to the Kistna delta estimates has already been made to the Government of India (*vide* docket No. 578 I., dated 1st October 1888), and that detailed statements showing the completed works of the Godávari delta and the amount required for finishing the remaining works of the delta are under preparation in the office of the Chief Engineer for Irrigation. As soon as these statements are ready, the necessary sanction of the Government of India will be applied for.

7. Ordered that a copy of these Proceedings be forwarded to the Government of India in reply to their letter No. 74 A.I., dated 4th August 1888.

(Here enter No. 607 I., dated 15th October 1888.)

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
To Superintending Engineers.
To the Examiner, Public Works Accounts.
" Revenue Department.

Endorsement—dated 15th October 1888, No. 607 I., Public Works.

Forwarded.

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 15th.

Recd. *Encl.*

G.O., 15th Oct. 1888, Nos. 606 I, 607 I.

OCTOBER.

Irregular Outlay

Forwarding copy of Proceedings on letter from the Government of India forwarding a statement showing the — incurred to the end of April 1888.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

Proceedings of the Government of India, Public Works Department (Account—Irrigation), dated Simla, 25th September 1888, No. 84 A.I.

Read—

Public Works Department Circular No. 38 P.W., dated 7th June 1875.
Letter from the Government of Punjab, No. 4968 A.I., dated 16th August 1888.

Resolution.—The Government of India having had under consideration certain proposals put forward by the Government of the Punjab with regard to the preparation of estimates for, and the accounting for the outlay on, Distributaries (item 3 of para. 9 of Public Works Circular No. 38 of 1875), has been pleased to approve of the following procedure being adopted, as it combines a ready means of check with a minimum of accounts work :—

I. A separate estimate should be submitted for each distributary with such minor channels taking off from it as are constructed from State funds. In those cases where there are minor channels the estimate should be divided into two parts, *first*, the main line with its more important branches, and, *secondly*, the minor channels which are designed to bring the water within reach of each village and thus obviate the necessity for long village watercourses.

II. The cost of *A. Preliminary expenses* for the whole project should be entered in the estimate for the distributary itself, but otherwise the prescribed classification should be fully adhered to in both estimates.

III. The abstracts of both estimates should show under sub-head *C. Works*, the quantities and cost of items of work (earthwork, brickwork, &c.), and the outlay should be accounted for in the same manner and not by individual works, such as heads, bridges, falls, &c.

IV. If, as sometimes happens, a work of exceptional magnitude, costing say more than Rs. 2,500, should be necessary in connection with a distributary, a separate account should be kept of it.

Order.—Ordered that this Resolution be communicated to the Governments, Administrations and officers noted in the margin for information and guidance.

The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab.
The Chief Commissioner, Burma.
The Agents to the Governor-General for Rajputana and Baluchistan.
The Accountant-General, Public Works Department.

(By order.)

(Signed) R. G. MACDONALD,
Offg. Dy. Secretary.

Order—dated 16th October 1888, No. 608 I., Public Works.

Communicated to the officers concerned for information and guidance in continuation of G.O., No. 1968, dated 10th July 1875.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
To Superintending Engineers.
To the Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 16*th.*

Recd. *Encl.*

G.O., 16th Oct. 1888, No. 608 I.

OCTOBER.

Distributaries

Orders of the Government of India laying down the procedure for accounting for outlay on —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From Lieutenant-Colonel R. R. E. DRAKE-BROCKMAN, R.E., Superintending Engineer, IV Circle, to the Chief Engineer for Irrigation, dated Coimbatore, 19th September 1888, No. 100-E.I.

In continuation of this office letter No. 97-E.I. of 17th instant, I have the honor to forward for sanction five estimates, amounting to Rs. 7,820, together with a general abstract of the estimates and report for improving the Amánitalave or Panchapalli tank and channel in the Hosúr taluk, Salem district.

ENCLOSURE.

Amanitalave or Panchapalli tank, Hosúr taluk, Salem district.

Report to accompany estimate for closing breaches in bank, restoring anicut, and improving head-sluice, supplying—

Amount of estimate ... ... Rs. 7,810

The tank was breached in three places in October 1887, caused by the water in the Sanathcomari river spilling over the right bank and flowing into the tank; one sluice was also completely destroyed. At the same time the anicut across the river supplying the tank was wholly washed away and the bank from the right wing of head-sluice was topped and breached.

2. The flood in the river was an extraordinary one caused by a number of tanks above the anicut which drain into the river having breached. So far as can be ascertained, it seems that with ordinary floods the water in the river does not spill over the right bank, and therefore it is not proposed to provide a flood bank along the right bank of the river, particularly as a bank would be an expensive work and occupy rather valuable dry land.

3. The estimate now submitted provides for closing the three breaches in the bank, putting a puddle wall in the centre of each, for clearing the supply channel which is much silted up for some distance from the head-sluice, for new wings on the right side of head-sluice and raising the face wall to level of adjacent land on right side, and for restoring the anicut.

4. With regard to the drainage area of tank, this is only about three square miles. At present there is a weir at the right and left ends of bank. The length of weir at right end is 64 feet and at left 34 feet, or the total is 98 feet. The calculated discharge from catchment area is 1,170 cubic feet per second taking C as 562·5. To discharge this quantity with the head allowed, 2 feet, a weir 123 feet long would be required against 98 feet, the length of the two weirs. It is not, however, proposed to increase the length of the weirs, for in case there should be too much water in tank it can spill over the bank between the weir at left end and "hillock" shown on sheet No. 13.

5. It will be noticed that the levels given on this sheet indicate that the surface level of the ground outside bank between weir and hillock is practically the same as F.T.L.

(Signed) J. W. MARTIN,
Executive Engineer.

14th August 1888.

ORDER—dated 17th October 1888, No. 610 I., Public Works.

The following estimate is sanctioned:—

Irrigation.
43. Minor Works and Navigation.
Irrigation and Navigation works for which neither Capital nor Revenue Accounts are kept.
Original Works.
Coimbatore Division.

	RS.
Improving the Amanitalave or Panchapalli tank and channel, estimate	7,820

2. This sanction has been registered as No. 106 I. of 1888-89.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, IV Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 17th.

Recd. *Encl.*

G.O., 17th Oct. 1888, No. 610 I.

OCTOBER.

Amanitalave or Panchapalli Tank and Channel, Coimbatore Division

Estimate for improving the —, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated 2nd October 1888, No. 223 B.C.

I have the honor to forward herewith, for your approval and sanction of Government, an estimate (in duplicate), amounting to Rs. 550, for purchasing from the Cuddapah-Nellore State Railway Superintendent two contractor's lift-pumps 7-inch cylinder with pipes and strainers for use on the Buckingham canal.

2. The estimate can be sanctioned from the balance available under Tools and Plant, Capital Account, of the Buckingham canal.

Order—dated 17th October 1888, No. 611 I., Public Works.

The following estimate is sanctioned from the balance of the lump sum provision made in the completion estimates of the Buckingham canal for Tools and Plant, which will then be reduced to Rs. 9,291 :—

Irrigation.
43. Minor Works and Navigation.
Irrigation and Navigation.
Works for which Capital and Revenue Accounts are kept.
Buckingham Canal.
Capital Account.
III. Tools and Plant.
New Supplies.

	RS.
Purchasing two contractor's lift-pumps 7-inch cylinder with pipes and strainers, estimate	550

2. This sanction has been registered as No. 107 I. of 1888-89.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, II Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 17th.

Recd. *Encl.*

G.O., 17th Oct. 1888, No. 611 I.

OCTOBER.

Contractor's Lift-pumps

Estimate for purchase of — for use on the Buckingham canal, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following paper :—

From G. T. WALCH, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishwaram, 11th September 1888, No. 1628 G.D. :—

I have the honor to forward herewith the usual annual statements, parts I and II, of the Irrigation Floating Plant.

2. Wooden boat No. 79 has disappeared from the list, having been sold in accordance with sanction given in G.O., No. 620 I., dated 11th October 1887.

3. The amounts shown as probable cost of upkeep in 1889-90 are what may be called the theoretic requirements and cannot, of course, be strictly adhered to; the actual amount for the purpose included in the Rs. 35,000 entered in the estimate of probable requirements, Irrigation, for 1889-90 for Repairs, "Tools and plant," Godávari Eastern section, is Rs. 21,000, and this is tc provide also for the repairs of existing ferry boats.

Enclosures.

Statement of the Irrigation Floating Plant in the Godávari District showing the estimated cost of upkeep during the year 1889-90.

Part I.—Steamers and Steam Dredges.

Registered number.	Details of Plant. Description.	Details of Plant. Name of steamers, &c.	Details of Plant. Date of construction.	Measurement of Plant. Hull over all. Length.	Measurement of Plant. Hull over all. Breadth.	Measurement of Plant. Hull over all. Depth.	Measurement of Plant. Extra width for paddle-box.	Measurement of Plant. Draft when loaded.	Measurement of Plant. Tonnage according to Navigation rules.	Machinery, &c. Engines. Nominal horse-power.	Machinery, &c. Engines. Description.	Machinery, &c. Boilers. Lb. pressure.	Machinery, &c. Boilers. Description.	Machinery, &c. Propellers. Description.	Machinery, &c. Propellers. Revolutions per minute.	Average speed miles per hour.	Value of Plant. Original.	Value of Plant. Present book-value.	Probable cost of upkeep in 1889-90.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
		Irrigation.		FT.	FT.	FT.	FT.										RS.	RS.	RS.	
	Steamer.	"Shamrock" ..	1859-60.	91-1	13-5	4-3	11-6	3-0	Gross 61, Net 41	16	High pressure ..	60	Horizontal.	Side paddle.	45	6	20,014	9,491	1,400	In working order.
	Do.	"Arthur Cotton."	1878-79.	60-10	9-6	5-0	..	3-6	Gross 28, Net 19	5 each	High pressure, double engine.	80	Do.	Twin screw.	218	8	9,535	8,271	1,240	New boiler will soon be wanted. Hull and existing boiler require repairs.
	Do.	"Victoria" ..	1881-82.	91-6	13-0	5-6	..	3-3	Gross 71, Net 47	150	Compound surface condensing.	60	Do.	Do.	230	10	50,956	34,268	2,480	In good working order.
		Total ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,120	
1	Dredge.	Canal iron dredge or double bucket ladder, side delivery.	1859-60.	85¾	14¼	3½	..	2	Gross 70, Net 47	4	High pressure ..	60	Horizontal.	..	..	..	26,373	6,194	460	In working order.
2	Do.	Canal iron dredge or single bucket ladder, end delivery.	1859-60.	50½	10-4½	3¾	..	3	Gross 32, Net 21	4	Do. ..	60	Vertical.	..	..	..	15,395	1,830	460	In working order.
3	Do.	Canal iron dredge or single bucket ladder, side delivery.	1859-60.	90-8	14-8	3¾	..	2	Gross 80, Net 53	8	Do. ..	60	Horizontal.	..	..	..	30,437	4,387	460	Under repairs.
4	Do.	Do. do. ..	1859-60.	90½	14-9	3¾	..	2	Gross 82, Net 55	8	Do. ..	60	Do.	..	..	..	30,437	7,695	460	In working order.
5	Do.	Do. do. ..	1859-60.	90½	14-9	3¾	..	2	Gross 82, Net 55	8	Do. ..	60	Do.	..	..	..	30,437	6,698	460	In working order.
6	Do.	Do. do. ..	1859-60.	90-11	14-9	3¾	..	2	Gross 82, Net 55	8	Do. ..	60	Do.	..	..	..	31,097	11,406	460	In working order.
	Do.	Priestman's, size B.	1884-85.	56½	14-3	4-8	..	2-11	Gross 53, Net 36	8	Do. ..	75	Vertical.	..	..	..	16,580	11,118	460	In working order.
		Total ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,220	
		Grand Total ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,340	

Rule for finding present Book-value.

(1) Steamers to be reduced 10 per cent. every year and the amount of special repairs, if any, must be added thereto.
(2) Steam dredges to be reduced 15 per cent. do. do. do. do.

(Signed) J. E. PAUL, Executive Engineer. (Signed) S. MURRAY, Assistant Engineer.

STATEMENT of the Irrigation Floating Plant in the Godávari District showing the estimated cost of upkeep during the year 1889-90.

Part II.—Barges, Boats and Punts.

Registered number.	Details of Plant.		Measurement of Plant.					Value of Plant.		Probable cost of upkeep in 1889-90.	Remarks.
	Description of Boats.	Date of construction.	Hull over all.			Draft when loaded.	Tonnage according to Navigation rules measurements.	Original.	Present book-value.		
			Length.	Breadth.	Depth.						
1	2	3	4	5	6	7	8	9	10	11	12
	Irrigation.		FT.	FT.	FT.			RS.	RS.	RS.	
1	Iron flat	1872-73	72-3	12-2	2-11	2¼	Gross 41 .. Net 35 ..	6,243	2,029	140	In working order.
2	Canal iron punt	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,913	120	In good working order.
3	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,405	120	In working order.
4	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,329	120	Under repairs.
5	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,325	120	In working order.
6	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	2,272	120	
7	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,815	120	
8	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,743	120	In good working order ; lately repaired.
9	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,383	120	In working order.
10	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,175	120	Under repairs.
11	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,336	120	
13	Iron dredge punt	1871-72	30-0	13-3	2-8½	1¾	Gross 16 .. Net 14 ..	2,310	1,069	70	In good working order ; lately repaired.
14	Canal iron punt	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,750	120	In working order.
15	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,447	120	
16	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,496	120	Under repairs.
17	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,778	120	In working order.
18	Iron dredge punt	1871-72	30-0	13-3	2-8½	1¾	Gross 16 .. Net 14 ..	2,310	805	70	In good working order ; lately repaired.
19	Canal iron punt	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	945	120	In working order.

Part II.—Barges, Boats and Punts—cont.

Registered number.	Details of Plant. Description of Boats.	Date of construction.	Measurement of Plant. Hull over all. Length.	Breadth.	Depth.	Draft when loaded.	Tonnage according to Navigation rules measurements.	Value of Plant. Original.	Present book-value.	Probable cost of upkeep in 1889-90.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
	Irrigation—cont.		FT.	FT.	FT.			RS.	RS.	RS.	
20	Canal iron punt	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,178	120	In working order.
21	Iron dredge punt	1871-72	30-0	13-3	2-8½	1¾	Gross 16 .. Net 14 ..	2,310	663	70	In good working order; lately repaired.
22	Do.	1871-72	30-0	13-3	2-8½	1¾	Gross 16 .. Net 14 ..	2,310	956	70	
23	Canal iron punt	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,346	120	
24	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,414	120	In working order.
25	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,383	120	
26	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,292	120	
27	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,639	120	In good working order; lately repaired.
28	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	2,348	120	
29	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,342	120	
30	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,410	120	In working order.
31	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,287	120	
32	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,832	120	In good working order; lately repaired.
33	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,811	1,386	120	
34	Iron flat	1860-61	60-6	11-5	3-7	2½	Gross 39 .. Net 33 ..	4,693	1,749	130	Under repairs.
36	Canal iron punt	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,249	120	
37	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,685	120	
38	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,450	120	
39	Do.	1859-60	60-3	10-3	2-9	2	Gross 26 .. Net 22 ..	2,812	1,006	120	In working order.
40	Iron deep boat	1860-61	79-10	10-6	4-11	4	Gross 64 .. Net 54 ..	4,693	2,012	190	

42	Do.	1861-62	60-8	11-7	5-2½	4	Gross 58 .. / Net 49 ..	5,000	1,538	190	
43	Do. (formerly steamer "Lotus").	1861-62	93-10	9-4	4-3½	3	Gross 55 .. / Net 47 ..	4,694	2,090	..	Useless. Sale recommended—see letter No. 1322, dated 10th August 1888, from Superintending Engineer to Chief Engineer for Irrigation (*vide* G.O., No. 510 I., dated 29th August 1888).
44	Wooden deep boat	1871-72	74-0	10-1	4-7	3¼	Gross 46 .. / Net 39 ..	2,330	1,647	[illegible]0	Under repairs.
45	Do.	1872-73	70-9	12-2½	4-6½	3¼	Gross 58 .. / Net 49 ..	2,117	2,569	170	In working order.
47	Do.	1864-65	72-6	12-6	5-2	3¾	Gross 66 .. / Net 56 ..	2,000	2,835	170	
48	Do.	1864-65	73-6	12-2	5-5	3¾	Gross 70 .. / Net 60 ..	2,000	3,031	170	In good working order; lately repaired.
49	Do.	1864-65	72-9	12-0	5-3½	3¾	Gross 62 .. / Net 53 ..	2,000	2,455	170	In working order.
50	Do.	1873-74	74-0	12-0	4-6½	3¼	Gross 56 .. / Net 48 ..	2,117	1,664	170	Under repairs.
65	Iron light boat	1871	35-9	8-7	3-3	2¼	Gross 16 .. / Net 14 ..	1,000	438	70	
66	Do.	1871	39-10	8-5	3-8	2¼	Gross 16 .. / Net 14 ..	1,000	944	70	
67	Do.	1871	39-10	8-5	3-8	2¼	Gross 16 .. / Net 14 ..	1,000	751	70	
68	Do.	1871	35-9	8-7	3-3	2¼	Gross 16 .. / Net 14 ..	1,000	563	70	
69	Do.	1871	35-9	8-7	3-3	2¼	Gross 16 .. / Net 14 ..	1,000	1,295	70	In working order.
70	Do.	1871	35-9	8-7	3-3	2¼	Gross 16 .. / Net 14 ..	1,000	519	70	
71	Do.	1873-74	35-9	8-7	3-3	2¼	Gross 16 .. / Net 14 ..	1,433	1,275	70	
72	Do.	1873-74	35-9	8-9	3-3	2¼	Gross 16 .. / Net 14 ..	1,433	940	70	
74	Do.	1871	35-9	8-7	3-3	2¼	Gross 16 .. / Net 14 ..	1,000	540	70	Under repairs.
75	Do.	1871	35-9	8-7	3-3	2¼	Gross 16 .. / Net 14 ..	1,000	762	70	In working order.
77	Wooden light boat	1873-74	40-6	9-3	2-10	2¼	Gross 15 .. / Net 13 ..	750	610	70	
78	Do.	1872-73	37-9	7-6	3-1	2¼	Gross 11 .. / Net 9 ..	200	146	70	Under repairs.
80	Iron flat (late steamer "Rose").	1874-75	94-3	13-9	4-3	3	Gross 80 .. / Net 68 ..	1,000	1,439	260	
81	Iron flat	1874-75	72-3	12-2	2-11	2¼	Gross 41 .. / Net 35 ..	7,375	1,903	140	
82	Wooden flat	1875-76	74-0	13-4	3-1½	2	Gross 40 .. / Net 34 ..	2,722	905	150	In working order.
83	Do.	1875-76	74-0	13-4	3-1½	2	Gross 40 .. / Net 34 ..	2,722	2,487	150	
84	Do.	1875-76	74-0	13-4	3-1½	2	Gross 40 .. / Net 34 ..	2,722	2,242	150	

Part II.—Barges, Boats and Punts—cont.

Registered number.	Details of Plant.		Measurement of Plant.					Value of Plant.		Probable cost of upkeep in 1889-90.	Remarks.
	Description of Boats.	Date of construction.	Hull over all. Length.	Hull over all. Breadth.	Hull over all. Depth.	Draft when loaded.	Tonnage according to Navigation rules measurements.	Original.	Present book-value.		
1	2	3	4	5	6	7	8	9	10	11	12
			FT.	FT.	FT.			RS.	RS.	RS.	
	Irrigation—cont.										
85	Wooden flat	1875-76	74-0	13-4	3-1½	2	Gross 40 .. Net 34 ..	2,722	2,414	150	In working order.
86	Do.	1875-76	74-0	13-4	3-1½	2	Gross 40 .. Net 34 ..	2,722	2,166	150	In good working order; lately repaired.
87	Do.	1875-76	74-0	13-4	3-1½	2	Gross 40 .. Net 34 ..	2,722	2,252	150	In working order.
88	Do.	1876-77	74-0	13-4	3-1½	2	Gross 40 .. Net 34 ..	2,800	2,135	150	In good working order; lately repaired.
89	Do.	1876-77	74-0	13-4	3-1½	2	Gross 40 .. Net 34 ..	2,800	2,349	150	In working order. (89–95)
90	Do.	1876-77	74-0	13-4	3-1½	2	Gross 40 .. Net 34 ..	2,800	2,470	150	
91	Do.	1876-77	74-0	13-4	3-1½	2	Gross 40 .. Net 34 ..	2,800	1,782	150	
92	Do.	1876-77	74-0	13-4	3-1½	2	Gross 40 .. Net 34 ..	2,800	2,251	150	
93	Do.	1876-77	74-0	13-4	3-1½	2	Gross 40 .. Net 34 ..	2,800	1,932	150	
94	Do.	1876-77	60-3	13-4	3-2½	2	Gross 36 .. Net 31 ..	2,405	1,278	130	
95	Do.	1876-77	60-3	13-4	3-2½	2	Gross 36 .. Net 31 ..	2,405	1,377	130	
96	Canal iron punt	1876-77	42-3	10-5	3-1	2½	Gross 20 .. Net 17 ..	3,610	1,609	120	In good working order; lately repaired.
99	Wooden flat	1877-78	60-3	13-4	3-2½	2	Gross 36 .. Net 31 ..	2,405	2,236	130	In working order.
100	Iron double trap punt ..	1879-80	60-3	10-3	3-0	2	Gross 29 .. Net 25 ..	4,185	1,870	100	In good working order; lately repaired. (100–101)
101	Do. do. ..	1879-80	60-3	10-3	3-0	2	Gross 29 .. Net 25 ..	4,185	2,145	100	
102	Iron deep boat (late steamer "Little Nell").	1882-83	90-0	9-3	4-4½	3¼	Gross 56 .. Net 48 ..	5,200	2,658	200	In working order. (102–103)
103	Circular trap punt	1882-83	13-7	13-7	4-1	3	Gross 6 .. Net 5 ..	1,200	639	40	
104	Iron double trap punt ..	1883-84	60-3	10-3	3-0	2	Gross 29 .. Net 25 ..	4,060	2,605	100	In good working order; lately repaired.
105	Iron punt	1887-88	72-0	12-2	3-0	2¼	Gross 42 .. Net 36 ..	6,960	6,264	140	In working order. Very old; will be sold as soon as the new boat (No. 22) sanctioned in G.O., No. 286 I., dated 12th May 1888, is finished.

1	1st-class staff boat	1872-73	44-0	7-0	3-0	2¼	Gross 13 .. Net 11 ..	1,557	..	..	In working order.
11	Do.	1878-79	53-9	12-0	2-5	1½	Gross 12 .. Net 10 ..	1,845	305	230	
12	2nd-class staff boat	1878-79	35-0	6-9	2-6	2	Gross 8 .. Net 7 ..	820	137	150	
13	Do.	1879-80	35-0	6-9	2-6	2	Gross 8 .. Net 7 ..	820	224	150	
14	1st-class staff boat	1880-81	46-6	12-0	2-3	1½	Gross 12 .. Net 10 ..	1,430	477	230	
15	2nd-class staff boat	1880-81	33-0	6-10	2-6	2	Gross 8 .. Net 7 ..	800	268	150	
16	1st-class staff boat	1882-83	42-0	12-0	2-6	1½	Gross 8 .. Net 7 ..	1,250	522	230	
17	2nd-class staff boat	1882-83	33-0	9-7	2-4½	2	Gross 6 .. Net 5 ..	850	353	150	
18	1st-class staff boat	1883-84	42-0	12-0	2-0	1½	Gross 8 .. Net 7 ..	1,400	702	230	
19	2nd-class staff boat	1883-84	33-0	9-7	2-0	2	Gross 8 .. Net 7 ..	850	425	150	
20	1st-class staff boat	1884-85	46-0	12-0	3-0	1½	Gross 13 .. Net 11 ..	1,400	846	230	
21	2nd-class staff boat	1884-85	33-0	6-10	2-6	2	Gross 8 .. Net 7 ..	840	490	150	
	Total ..	..	..	..	..	..	..	..	..	11,950	
	Hand dredge	1885-86	48-5	8-4	1-4	0-10	5	800	653	50	Under repairs.
A	U.G. barge	Fitted in May 1868.	90-0	14-0	4-0	2-0	70	3,500	3,847	340	In working order.
B	Do.		90-0	14-0	4-0	2-0	70	3,500	1,701	340	
C	Do.		90-0	14-0	4-0	2-0	70	3,500	749	340	Under repairs.
D	Do.		90-0	14-0	4-0	2-0	70	3,500	2,761	340	In working order.
E	Lo.		90-0	14-0	4-0	2-0	70	3,500	3,741	340	
F	Do.		90-0	14-0	4-0	2-0	70	4,000	1,145	340	Under repairs.
	Total ..	..	..	..	..	..	..	..	..	2,040	
1	Jolly boat	1878-79	25-4	7-2	2-11	1-0	Gross 6 .. Net 5 ..	Not known.		60	In good working order; lately repaired.
2	Do.	1881-82	15-0	4-4	1-4½	0-9	1	165	165	20	In good working order. (Newly brought on to this list as it is thought advisable that they should be treated as the rest of the plant.)
3	Do.	1884-85	21-6	5-10	2-6½	1-3	Gross 4 .. Net 3 ..	340	340	16	
4	Do.	1885-86	15-0	4-4	1-4½	0-9	1	165	165	20	
5	Do.	Unknown.	18-6	4-7	2-1½	1-0	2	Unknown.	..	16	
6	Survey Nava	1885-86	37-6	6-10	3-2	1-6	Gross 11 .. Net 9 ..	300	300	35	
7	Do.	1885-86	37-6	6-10	3-2	1-6	Gross 11 .. Net 9 ..	300	300	35	
	Total ..	..	..	..	..	..	..	..	..	202	
	Grand Total ..	..	..	..	..	..	..	..	..	14,242	

Rules for finding present Book-value.

(1) Boats and barges to be reduced 10 per cent. every year and the amount of special repairs, if any, to be added thereto.
(2) Staff boats to be reduced by one-twelfth of their original cost for each year of their life.

DOWLAISHWERAM,
5th August, 1888.

(Signed) W. JONES,
Boat Superintendent.

(Signed) J. E. PAUL,
Executive Engineer.

DETAILED approximate estimate of the annual cost of maintenance of the Irrigation Floating Plant, Godávari District.

Particulars.	Steamer "Shamrock."	Steamer "Victoria."	Steam launch "Arthur Cotton."	Canal dredges.	Barges.	Canal punts.	Dredge punts, 30 feet long.	Wooden light boats.	Iron light boats.	No. 80, iron flat (late steamer "Rose").	Wooden flats, 74 feet long.	Staff boats, first class.	Staff boats, second class.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Docking and launching.	50	50	50	50	25	12	10	10	10	40	15	10	10
Painting	500	500	195	120	150	31	20	..	20	122	..	110	65
Caulking	70	43	18	50	30	36	20	40	10	65	110	40	33
Varnishing	..	20	..	..	..	..	..	..	..	..	..	10	..
Tarring	..	..	..	50	50	20	10	..	10	..	..	..	..
Ropes, &c.	30	30	30	30	58	11	10	20	10	10	14	10	12
Syrang	46	345	180	..	..	..	..	..	..	..	..	..	..
Engine Driver ..	44	324	204	..	..	..	..	..	..	..	..	..	..
Assistant Engine Driver.	..	45	..	..	..	..	..	..	..	..	..	..	..
Steersman	49	154	96	..	..	..	..	..	..	..	..	..	..
Firemen	218	371	192	..	..	..	..	..	..	..	..	..	..
Lascars	61	147	84	20	..	..	..	..	..	..	..	..	..
Small stores	122	191	61	12	..	..	..	..	..	..	..	..	..
Centage	60	60	30	28	27	10	..	..	10	23	11	20	10
Sundry repairs ..	150	200	100	100	..	..	..	..	..	..	..	30	20
Total ..	1,400	2,480	1,240	460	340	120	70	70	70	260	150	230	150

Particulars.	Iron deep boats.	Iron flat, No. 81, and iron punt, No. 105.	No. 102, iron deep boat, or late steamer "Little Nell."	No. 103, circular trap punt.	Jolly boat, large.	Hand dredge.	Double trap punts.	Wooden flats, 60′ 3″ long.	Iron flat, 60½ feet long.	Wooden deep boats.	Jolly boats, Nos. 2 and 4.	Jolly boats, Nos. 3 and 5.	Survey Navas.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Docking and launching.	30	15	40	10	5	10	12	15	12	25	..	..	5
Painting	63	45	105	22	30	..	30	..	35	..	8	..	..
Caulking	20	36	25	..	18	30	30	90	40	99	8	12	24
Varnishing	..	..	..	..	..	..	..	..	..	..	..	..	..
Tarring	27	19	..	..	..	..	20	..	20	..	..	..	..
Ropes, &c.	37	14	14	5	2	6	..	14	15	34	4	4	6
Syrang	..	..	..	..	..	..	..	..	..	..	..	..	..
Engine Driver ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Assistant Engine Driver.	..	..	..	..	..	..	..	..	..	..	..	..	..
Steersman	..	..	..	..	..	..	..	..	..	..	..	..	..
Firemen	..	..	..	..	..	..	..	..	..	..	..	..	..
Lascars	..	..	..	..	..	..	..	..	..	..	..	..	..
Small stores	..	..	..	..	..	..	..	..	..	..	..	..	..
Centage	13	11	16	3	5	4	8	11	8	12	..	..	..
Sundry repairs ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	190	140	200	40	60	50	100	130	130	170	20	16	35

DOWLAISHWERAM,
5th August 1888.

(Signed) S. B. MURRAY,
Assistant Engineer.

(Signed) W. JONES,
Boat Superintendent.

(Signed) J. E. PAUL,
Executive Engineer.

Abstract showing the comparison of details between the estimated maintenance cost of Floating Plant in the Godávari district for 1888-89 and 1889-90.

—	Number.		Original value.		Book-value.		Cost of upkeep.		Remarks.
	1889-90.	1888-89.	1889-90.	1888-89.	1889-90.	1888-89.	1889-90.	1888-89.	
1	2	3	4	5	6	7	8	9	10
			RS.	RS.	RS.	RS.	RS.	RS.	
Steamers	3	3	80,505	80,505	52,030	55,111	5,120	4,830	
Dredges	8	8	1,81,556	1,81,556	49,981	50,903	3,270	3,270	Includes hand-dredge constructed in 1885-86.
Barges	6	6	21,500	21,500	13,944	15,490	2,040	2,040	
Iron flats, Nos. 1, 34, 80 and 81	4	4	19,311	19,311	7,120	7,909	670	670	
Iron punts, Nos. 2 to 11, 14 to 17, 19 and 20, 23 to 33, 36 to 39, and 96 and 105	33	33	97,730	97,728	54,232	56,965	3,980	3,980	
Iron dredge punts, Nos. 13, 18, 21 and 22	4	4	9,240	9,240	3,493	2,889	280	280	
Double trap punts, Nos. 100, 101 and 104	3	3	12,430	12,430	6,620	6,299	300	300	
Circular trap punt, No. 103	1	1	1,200	1,200	639	710	40	40	
Iron deep boats, Nos. 40, 42, 43 and 102	4	4	19,587	19,587	8,298	9,218	580	770	
Iron light boats, Nos 65 to 72 and 74 and 75 ..	10	10	10,866	10,866	8,027	8,912	700	700	
Wooden deep boats, Nos. 44, 45 and 47 to 50 ..	6	6	12,564	12,564	14,201	15,233	1,020	1,020	
Wooden light boats, Nos. 77 and 78	2	3	950	1,150	756	1,044	140	140	
Wooden flats, Nos. 82 to 95 and 99	15	15	40,347	40,347	30,276	31,130	2,190	2,190	
Staff boats, 1st class, Nos. 1, 11, 14, 16, 18 and 20 ..	6	6	8,882	8,882	2,852	3,461	1,150	1,380	
Do. 2nd class, Nos. 12, 13, 15, 17, 19 and 21 ..	6	6	4,980	4,980	1,897	2,311	900	900	
Jolly boats and survey navas, Nos. 1 to 7	7	1	1,270	..	1,270	..	202	60	
Total ..	118	113	5,22,918	5,21,846	2,55,636	2,67,585	22,582	22,570	

(Signed) G. T. WALCH,
Superintending Engineer, I Circle.

No. 151 I.

Submitted to Government.

2. The estimate of the cost of upkeep during 1889-90 of the floating plant of the Godávari delta amounts to Rs. 22,582, but as only Rs. 21,000 have been provided for this purpose in the rough estimate of requirements submitted with this office note No. 145 I., dated 28th ultimo, for the approval of Government and transmission to the Government of India, it is recommended that the estimate may be reduced to the latter amount.

CHEPÂK,
11th October 1888.

(Signed) G. T. WALCH,
Ag. Chief Engineer for Irrigation.

To the Ag. Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 17th October 1888, No. 612 I., Public Works.

The estimate, amounting to Rs. 22,582, of the cost of upkeep of the floating plant belonging to the Godávari delta is reduced to Rs. 21,000, and only this latter sum will be entered on that account in the preliminary issue of the budget estimates for 1889-90 of Major Works.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 17th.

Recd. *Encl.*

G.O., 17th Oct. 1888, No. 612 I.

OCTOBER.

Floating Plant, Godavari Delta

Estimate of the cost of upkeep of the — reduced from Rs. 22,582 to Rs. 21,000 and to be entered in the preliminary issue of the budget estimates for 1889-90 of Major Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper:—

From W. HUGHES, Esq., Executive Engineer, in charge of VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 8th October 1888, No. 672 T.N.

Under para. 1339 of the Public Works Code, I have the honor to request sanction of Government to the construction, by this department, of a syphon sluice across the Aiyampillaikulam supply channel in the Ambásamudram taluk, Tinnevelly division.

2. There is no means of draining the nunjah land, which is situated in the vicinity of the waterspread of the tank and which is below the full supply level, and so the land is surrounded by water of the tank and of an irrigation channel. The owners of the land wish to have the syphon sluice built in order to prevent damage to the crops.

3. The ryots interested in the work have paid into the treasury the amount of the estimate, Rs. 260, together with Rs. 64, the prescribed centage for establishment and tools and plant, and the estimate has been approved by the Collector.

ORDER—dated 17th October 1888, No. 613 I., Public Works.

The execution, by this department, of the work referred to, is sanctioned.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, VI Circle.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 17th.

Recd. *Encl.*

G.O., 17th Oct. 1888, No. 613 I.

OCTOBER.

Syphon Sluice across the Aiyampillaikulam supply channel, Tinnevelly Division.

Construction of — by the Public Works Department, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers:—

From J. HANNAN, Esq., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezváda, 28th August 1888, No. 1323 K.S.

1 Comparative statement.
1 Statement A.
1 Do. AA.
1 Do. AAA.
1 Do. B.
1 Do. C.
1 Abstract of statement C.
1 Statement D.
1 Do. E.
1 Do. F.

I have the honor to forward herewith the marginally-noted statements of Navigation receipts and charges appertaining to the Kistna delta system for the official year 1887-88.

2. Under receipts there is an increase of Rs. 6,238 this year over the receipts of last year; this is due to more collections under tolls and license fees.

3. Under charges the expenditure this year is less than that of last year by Rs. 19,459. This decrease is under repairs and is due to indirect charges, being calculated at one-third of the expenditure incurred agreeably to the instructions contained in para. 22 of the note printed in G.O., No. 460 I., of the 6th August 1888, also in para. 2 of your memorandum No. II/69 K.S., of the 16th instant.

4. The silt clearance on the Nizampatam canal, 596 + 8,879 = Rs. 9,475, I consider exceedingly heavy. This is intended to be an exclusively navigable canal. Its length is 28 miles and it is divided into four dead level reaches. Owing, however, to the east and west side channels not being in an efficient condition and to the areas now to be irrigated under them being in excess of what they were originally designed to irrigate, the supply in the lower reaches has to be supplemented from the lower reach of the canal, in the last 4 miles of which there are no less than 25 palmyra sluices for this purpose. I will take early steps to remedy this state of affairs and have the side channels put in proper order, so that these sluices may be done away with when this heavy item for clearance will be very considerably diminished.

5. The direct charges under the head "Clearing tow-paths" I consider excessive. It comes to Rs. 9,051 in the Eastern against Rs. 3,545 in the Western delta, although the mileage of navigable canals in both divisions is practically the same. I believe these items include the cost of establishment for planting and maintaining avenues, which is not a legitimate charge to navigation. The construction of tow-paths is also doubtless included, but as this is done from silt clearance and as depositing the spoil on the berm is less expensive than to carry it over the bunds, the cost should certainly not be debited to navigation. The charge for lock establishment on the Masulipatam canal alone is within Rs. 100, being equal to the whole cost of lock establishment in the Western delta. All these are matters which I will inquire into, but as this statement is long overdue and as it takes weeks and sometimes months to get anything like statistical information out of the Eastern division office, I forward on this statement as it is.

6. The delay in the submission of these statements is due to the late receipt of the statements from the Kistna Eastern division.

ENCLOSURES.

COMPARATIVE statement showing the charges and receipts on account of Navigation in the canals of Kistna delta for 1884-85, 1885-86, 1886-87 and 1887-88.

Particulars.	Official year 1884-85.	Official year 1885-86.	Official year 1886-87.	Official year 1887-88.
	RS.	RS.	RS.	RS.
Charges.				
Lock establishment	9,966	10,630	10,614	10,480
Direct charges for repairs	25,794	28,830	26,434	22,962
Indirect charges for repairs	26,059	27,619	41,236	24,804
Interest on capital outlay	11,001	12,332	13,122	13,701
Total ..	72,820	79,411	91,406	71,947
Receipts.				
License fees for cargo boats	6,620	7,215	5,217	4,843
Do. for passenger boats	1,980	2,748	2,463	3,470
Do. for Government boats	2,496	2,816	2,890	3,070
Do. for staff boats	90	84	84	84
Do. for miscellaneous	185	139	182	207
Tolls on cargo boats .. .. } Do. on passenger boats .. .. }	5,839	7,643	11,344	16,457
Do. on miscellaneous .. .. Do. on rafts	1,950	2,686	1,865	2,152
Total ..	19,160	23,331	24,045	30,283
Add balance deficient ..	53,660	56,080	67,361	41,664
Grand Total ..	72,820	79,411	91,406	71,947

A.—Statement showing the expenditure on repairs of Navigable canals in the Kistna district for 1887-88.

—	NAVIGATION REPAIRS PROPER.				REPAIRS TO NAVIGABLE CANALS.					Total of columns 7 and 13.
	Lock and lock weir repairs.	Navigation buildings.	Clearing tow-paths.	Total.	Repairs to canal banks.	Silt clearance in canals.	Repairs to masonry works.	Miscellaneous.	Total.	
1	2	3	4	5	6	7	8	9	10	11
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Kistna Eastern Delta.										
1. Main canal	1,478	19	956	2,453	..	4,897	352	..	5,249	7,702
2. Ellore do.	..	..	3,426	3,426	50	8,613	1,239	965	10,867	14,293
3. Masulipatam canal	2,998	..	2,768	5,766	783	7,404	884	1	9,072	14,838
4. Pamarru junction canal ..	..	..	..	..	..	697	..	..	697	697
5 Pulleru canal	29	5	725	759	..	1,518	281	214	2,013	2,772
6. Polraz do.	334	41	989	1,364	..	2,173	24	..	2,197	3,561
7. Bantumilli canal	280	..	187	467	..	376	70	..	446	913
Total ..	5,119	65	9,051	14,235	833	25,678	2,850	1,180	30,541	44,776
Kistna Western Delta.										
1. Main canal	..	..	213	213	..	13,259	166	130	13,555	13,768
2. Nizampatam canal	1,263	185	596	2,044	..	8,879	54	433	9,366	11,410
3. Bank canal	417	35	775	1,227	262	1,091	12	896	2,261	3,488
4. Commamur canal	1,422	46	1,961	3,429	957	13,596	2,206	1,930	18,689	22,118
Total ..	3,102	266	3,545	6,913	1,219	36,825	2,438	3,389	43,871	50,784
Grand Total ..	8,221	331	12,596	21,148	2,052	62,503	5,288	4,569	74,412	95,560

AA.—Abstract of statement A.

Names of canals.	Navigation repairs proper in column 7 of statement A.	Repairs to navigable canals, column 13 of statement A.	Proposed length of canals.		Length open to navigation.		Proportion of column 3 chargeable to Navigation.		Total columns 2 and 7.
							Percentage.	Amount.	
1	2	3	4		5		6	7	8
Kistna Eastern Delta.	RS.	RS.	MS.	CH.	MS.	CH.		RS.	RS.
1. Main canal	2,453	5,249	0	51	0	51		1,750	4,203
2. Ellore do.	3,426	10,867	40	0	40	0		3,622	7,048
3. Masulipatam canal	5,766	9,072	49	7	49	7		3,024	8,790
4. Pamarru junction canal ..	..	697	0	40	0	40		232	232
5. Pulleru canal	759	2,013	26	62	17	62		671	1,430
6. Polraz do.	1,364	2,197	26	16	26	16		732	2,096
7. Bantumilli canal	467	446	24	60	14	20		149	616
Total ..	14,235	30,541	167	76	148	36	One-third.	10,180	24,415
Kistna Western Delta.									
1. Main canal	213	13,555	13	0	13	0		4,518	4,731
2. Nizampatam canal	2,044	9,366	28	20	28	20		3,122	5,166
3. Bank canal	1,227	2,261	45	60	33	11		754	1,981
4. Commamur canal	3,429	18,689	57	38	58	10		6,230	9,659
Total ..	6,913	43,871	144	38	132	41		14,624	21,537
Grand Total ..	21,148	74,412	312	34	280	77		24,804	45,952

B.—Statement of receipts and charges in the Kistna district navigation for the year 1887-88.

RECEIPTS FOR 1887-88. Description.	Amount.	CHARGES FOR 1887-88. Description.	Amount.
	RS.		RS.
(1) License fees for cargo boats	5,163 − 320	(1) Lock establishment	10,480
Do. for passenger boats, 1st class.	..	(2) Lock and lock weir repairs	8,221
Do. for do. 2nd ,,	8,498 − 28	(3) Navigation buildings— (a) Improvements	1,814
		(b) Repairs	331
Do. for Government boats ..	3,070	(4) Tow-path maintenance	12,596
Do. for staff boats	84	(5) Dredging	..
Do. for miscellaneous, including private and pleasure boats, duplicate license fees, &c.	219 − 12	(6) Miscellaneous, including any charges not appertaining to the above items ..	..
		(7) Share of canal maintenance	24,804
		(8) Miscellaneous general charges	..
(2) Tolls on cargo boats, passenger boats and miscellaneous	16,457	(9) Interest for the year on capital outlay on navigation works at 4 per cent. on Rs. 3,36,648 and at 2 per cent. on Rs. 11,791 as per column 4 of abstract of memorandum C	13,701
(3) Rafts	2,152		
	30,283		
Balance deficient ..	41,664		
Total ..	71,947	Total ..	71,947

ABSTRACT of memorandum C.

Statement showing capital outlay on Navigation works proper of the Kistna delta from the year 1870-71 inclusive.

Sections of delta.	To end of 1886-87.	Outlay in 1887-88.	Total.
	RS.	RS.	RS.
Eastern section	1,03,565	10,400	1,13,965
Western do.	2,33,083	1,391	2,34,474
Total ..	3,36,648	11,791	3,48,439

D.—Statement showing the revenue obtained in licensing Boats in the Kistna district from 1885-86 to 1887-88.

—	1885-86.					1886-87.					1887-88.				
	Class.	Total number.	Tonnage.	Number of passengers.	Amount of license.	Class.	Total number.	Ton-nage.	Number of passengers.	Amount of license.	Class.	Total number.	Ton-nage.	Number of passengers.	Amount of license.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					RS.					RS.					RS.
(1) License fees for cargo boats	..	172	2,930	..	7,325 − 110	..	123	2,262	..	5,655 − 438	..	98	2,065	..	5,163 − 320
Do. for passenger boats, 1st class. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. for do. 2nd ,, ..	2nd	46	916	2,763	2,748	2nd	42	842	1,535	2,526 − 63	2nd	47	1,166	2,908	3,498 − 28
Do. for Government boats	..	49	1,118	..	2,816	..	52	1,156	..	2,890	..	55	1,228	..	3,070
Do. for staff boats	..	7	..	..	84	..	7	..	..	84	..	7	..	..	84
Do. for miscellaneous, including private and pleasure boats, duplicate license fees, &c	..	16	..	..	139	..	15	..	..	182	..	19	..	..	219 − 12
(2) Tolls on cargo boats, passenger boats, miscellaneous	..	..	..	..	8,214 − 571	..	..	..	..	11,344	..	..	..	..	16,457
Tolls on rafts	..	..	..	..	2,686	..	..	..	..	1,865	..	..	..	..	2,152
Total ..	..	..	..	..	23,331	..	..	..	..	24,045	..	..	..	..	30,643 − 360
															30,283

	RS.
Note.—Total receipts as per traffic returns are	27,489
Add license fees on floating plant	3,154
Total ..	30,643

F.—Memorandum showing the offences against bye-laws during the year 1887-88 and punishments inflicted.

Nature and description of boats.	RULE No. 7.		RULE No. 20.		RULE No. 22.		RULE No. 27.		RULES Nos. 20, 30, AND 33.		RULE No. 32.		RULE No. 36.		WHARF RULE No. 5.	
	Number of boat.	Number of days stopped.	Number of boat.	Number of days stopped.	Number of boat.	Number of days stopped.	Number of boat.	Number of days stopped.	Number of boat.	Number of days stopped.	Number of boat.	Number of days stopped.	Number of boat.	Number of days stopped.	Number of boat.	Number of days stopped.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Kistna Eastern.																
Passenger boat ..	T. No. 27	12	T. No. 74	9	..	..	7 K.	8	T. No. 124	7	T.No. 126	5	..	..	20 K.	7
	..	..	,, 81	9	..	..	..	..	..	..	..	..	..	..	24 K.	7
	21 K.	7	,, 82	9	..	..	..	..	..	..	..	..	..	..	..	..
	21 K.	30	118 G.	4	..	..	..	..	..	..	..	..	..	..	..	..
	17 T.	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	T. No. 269	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	33 K.	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	7 K.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	T. No. 119	7	..	..	..	...	..	..	..	..	..	..	..	..	..	..
	12 K.	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kistna Western.																
Cargo boat ..	..	..	..	..	7	10	..	..	..	..	..	..	..	..	..	..
	..	..	..	..	..	..	..	..	..	..	..	..	*164 G.	..	..	..
	..	..	..	..	..	..	..	..	..	..	..	..	† 536	..	..	..

* Fined Rs. 9 † Fined Rs. 10.

Office note to Examiner, Public Works Accounts, dated 14th September 1888, No. 191.
Do. from do. do. „ 9th October 1888, No. 2381.

No. 157 I.

Submitted to Government.

Chepâk,
17th October 1888.

(Signed) G. T. WALCH,
Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 19th October 1888, No. 618 I., Public Works.

Recorded.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Superintending Engineer, II Circle.
„ Examiner, Public Works Accounts.
„ Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 19th.

Recd. *Encl.*

G.O., 19th Oct. 1888, No. 618 I.

OCTOBER.

Kistna Delta System

Letter from the Superintending Engineer, II Circle, submitting statements of navigation receipts and charges appertaining to the — for 1887-88, recorded.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers :—

From J. E. PAUL, Esq., Executive Engineer, in charge I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 12th June 1888, No. 676 G.D.

I have the honor to submit herewith the usual statements A, B, C and D showing the Navigation receipts and charges for the official year 1887-88.

2. It will be seen from these statements that the total receipts are Rs. 8,906 more and the charges Rs. 3,543 are also more than those for 1886-87.

3. The receipts under the various heads for the year compare as follows with those for 1886-87 :—

Items.	1886-87.	1887-88.	Increase.	Decrease.
	RS.	RS.	RS.	RS.
1. License fees for Government boats	5,143	6,632	1,489	..
2. Do. for steamers and dredges	1,089	275	..	814
3. Do. for staff boats	141	144	3	..
4. Do. for passenger boats	6,737	5,124	..	1,613
5. Do. for cargo boats	32,309	29,977	..	2,332
6. Do. for miscellaneous	375	398	23	..
7. Tolls on all kinds of boats and rafts	41,099	53,219	12,120	..
Total ..	86,893	95,769	13,635	4,759

4. The increase on the item 1 is partly due to two more Government boats having been licensed this year, and partly to more accurate measurements having been taken.

5. The increases under items 3 and 6 are small and do not require any explanation.

6. The decrease under item 2 is due to tolls having been taken for canal dredges instead of licenses.

7. The decreases under items 4 and 5 and the increase under 7 is owing to a much less number of boats having taken licenses than last year.

8. Under expenditure the increases and decreases over those for 1886-87 are—

Items.	1886-87.	1887-88.	Increase.	Decrease.
	RS.	RS.	RS.	RS.
1. Lock establishments	20,790	22,482	1,692	..
2. Lock and lock weir repairs	16,299	19,425	3,126	..
3. Navigation buildings	272	295	23	..
4. Tow-path maintenance	6,333	2,864	..	3,469
5. Dredging	1,370	6,911	5,541	..
6. Share of canal maintenance	15,599	15,476	..	123
7. Miscellaneous including any charges not appertaining to the first six items	6,229	2,982	..	3,247
Total ..	66,892	70,435	10,382	6,839

9. The increase under item 1 is due to salaries of Boat Superintendent and weir lascars in the Eastern division having in 1886-87 been omitted, and the salaries of certain Lock Superintendents in the Western division having in 1886-87 been charged to Irrigation establishment and charged this year correctly to the above item.

10. The increase on item 2 is due in restoring damages caused by the extraordinary floods of 1886. The increase on item 5 is due to much more dredging being done which was under possibility, the dredging plant being put into thorough repair at the beginning of the year.

11. The reasons for decreased expenditure under item 4 is that the salaries of canal coolies in the Eastern division were erroneously charged in last year to item 4 instead of to the item 6.

12. The decrease under item 6 is small and do not call for any special remark.

13. The large increase on item 7 is due to the abnormal short expenditure in 1887-88.

14. Statement D shows that 52 cases were punishments inflicted for infringement of navigation rules against 11 cases in the previous year.

15. The delay in the submission of these statements on due date is on account of the Central division officer's statements not having been received in this office until the 28th May 1888.

16. There is a difference of Rs. 6,159 in the navigation receipts between the figures entered in the statement A and those shown in the traffic statements for 1887-88, and this is due to the collections made for 1888-89 being erroneously included in the traffic statement for the half-year ending 31st March 1888 in the following divisions:—

	RS.
Godávari Eastern	4,194
Do. Western	1,965
Total ...	6,159

To Superintending Engineer, I Circle, dated 17th August 1888, No. 78 G.D.

From Lieutenant-Colonel R. R. E. DRAKE-BROCKMAN, R.E., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 6th October 1888, No. 1861 G.D.

With reference to your memorandum No. 1/78 G.D., dated 17th August 1888, I have the honor to resubmit herewith the navigation statements with the necessary alterations made as required in para. 2 of the above memorandum, and to inform you

that the instructions contained in para. 22 of the Chief Engineer's notes printed with G.O., No. 460 I., dated 6th August 1888, have been attended to.

2. The cause of differences between the total amount of navigation receipts as reported by this office and those stated by the Examiner is as shown below:—

	RS.
Amount realized as per books of Examiner	1,01,390
Do. as per Navigation statements sent by this office ...	95,769
Difference ...	* 5,621

	RS.
* License fees collected for 1888-89 and now included in the navigation statements as ordered.	6,159
Deduct refunds	(a) 538
	5,621

RS.
(a) 465 being the cost of printing charges for license forms.
73 deducted from the navigation receipts under various heads.

538 total deduction from the navigation statements A and B.

(2) The refunds (Rs. 538) were made in the Godávari Eastern division on account of tolls and license fees by debiting the same against the budget grant "Revenue Account" (*vide* para. 1871 of the Public Works Code), but it appears that this charge has been excluded by the Examiner from Revenue Account.

3. The boat rents, fees for painting numbers and fines are not treated as navigation receipts (*vide* your remarks in para. 1 of the memorandum under reply).

ENCLOSURES.

A.—Statement of receipts and charges, Godávari delta navigation, for the official year 1887-88.

RECEIPTS FOR THE OFFICIAL YEAR 1887-88.			CHARGES FOR THE OFFICIAL YEAR 1887-88.		
Description.	Amount.	Remarks.	Description.	Amount.	Remarks.
	RS.			RS.	
License fees for Government boats.	6,632	See statement B.	(1) Lock establishments	22,482	See statement C.
Do. for steamers and dredges.	275		(2) Lock and lock weir repairs ..	* 19,425	
Do. for staff boats ..	144		(3) Navigation buildings ..	295	
Do. for passenger boats ..	5,247		(4) Tow-path maintenance ..	2,864	
Do. for cargo boats ..	35,919		(5) Dredging	6,911	
Do. for miscellaneous, including private or pleasure boats.	420		(6) Share of canal maintenance ..	15,476	
Tolls on cargo boats	33,391		(7) Miscellaneous including charges not appertaining to the first six items.	2,982	
Do. on passenger boats	5,481			70,435	
Do. on miscellaneous	94		Interest at 2 per cent. on capital outlay during the year on navigation works proper.	655	
Do. on rafts	14,252		Interest for the year on capital outlay on navigation works proper to end of 1886-87 at 4 per cent.	36,990	
Deduct.					
Charges for printing license forms deducted from "Revenue" by the Examiner of Public Works Accounts.	**— 465**				
	1,01,390				
Loss ..	6,690				
Total ..	1,08,080		Total ..	1,08,080	

* The cost of construction of Dowlaishweram head lock and connected works sanctioned in G.O., No. 44 I., dated 20th January 1887, is omitted in this as the items are Original Works, although they were sanctioned under Maintenance and repairs.

STATEMENT of capital outlay on Navigation works proper of the Godávari delta from the year 1870-71 inclusive.

Section of delta.	To end of 1886-87.	For 1887-88.	Total.
	RS.	RS.	RS.
Eastern division	2,65,503	..	2,65,503
Central do.	2,15,577	26,880	2,42,457
Western do.	4,43,716	5,818	4,49,534
Total ..	9,24,796	32,698	9,57,494

B.—Statement showing the Navigation receipts for the official year 1887-88.

Particulars.	OFFICIAL YEAR 1886-87.					OFFICIAL YEAR 1887-88.				
	Class.	Total number.	Measured tonnage licensed at 50 cubic feet per ton.	Number of passengers licensed to carry.	Amount of license fees and tolls.	Class.	Total number.	Measured tonnage licensed at 50 cubic feet per ton.	Number of passengers licensed to carry.	Amount of license fees and tolls.
					RS.					RS.
License fees for Government boats ..	..	87	2,059	..	5,143	..	89	2,653	..	6,632
License fees for steamers and dredges ..	..	8	222	..	1,089	..	2	55	..	275
License fees for staff boats	..	12	..	..	141	..	12	..	..	144
License fees for cargo boats	..	714	15,800	..	32,309	..	666	16,011	..	35,919
License fees for passenger boats	1st class.	..	..	..	..	..	..	..	..	..
License fees for passenger boats	B or 2nd class.	141	2,670	6,696	6,737	2nd class.	113	1,924	3,848	5,247
License fees for miscellaneous, including private or pleasure boats.	..	43	..	..	375	..	58	..	..	420
Tolls on cargo boats ..	..	..	..	..	24,791	..	..	..	..	33,391
Do. on passenger boats.	..	..	..	..	1,398	..	..	..	..	5,481
Do. on miscellaneous..	..	..	..	..	134	..	..	..	..	94
Do. on rafts ..	..	..	..	..	14,776	..	..	..	..	14,252
Charges for printing license forms deducted from Revenue by the Examiner of Public Works Accounts ..	..	..	..	..	..	..	..	..	..	—465
Total ..	..	1,005	20,751	6,696	86,893	..	940	20,643	3,848	1,01,390

C.—Statement showing the total maintenance charges on Navigable canals of the Godávari delta for the year 1887-88.

Description.	Total charges for 1887-88.	DEBITABLE TO NAVIGATION.		DEBITABLE TO IRRIGATION.	
		Rate.	Amount.	Rate.	Amount.
	RS.		RS.		RS.
Lock establishments	22,482	Whole.	22,482	..	..
Lock and lock weir repairs	19,425	Do.	19,425	..	..
Navigation buildings	295	Do.	295	..	..
Tow-path maintenance	2,864	Do.	2,864	..	..
Dredging	6,911	Do.	6,911	..	..
Share of canal maintenance	* 61,905	About ¼	15,476	¾	46,429
Miscellaneous including any charges not appertaining to the first six items	† 11,930	¼	2,982	¾	8,948
Total ..	1,25,812	..	70,435	..	55,377

* This amount includes expenditure on the following items:—
(1) Repairs to canal banks (one-fourth of this charged to Navigation).
(2) Silt clearance (one-fourth of this charged to Navigation).
(3) Avenue coolies (half of this is charged to Navigation).
† This item represents expenditure on repairs to other masonry works (one-fourth of this chargeable to Navigation).

D.—Memorandum showing the offences against Navigation Rules and Regulations during the official year 1887-88.

Nature and description of boats.	Rule 7, for refusing to carry irrespective of caste.		Regulation 20, for not having sufficient free board.		Regulation 26, for not having masts down when moored in canal.		Regulation 27, for not having a light on boat.		Regulation 30, for not keeping boat clean and for not keeping in proper repair.		Regulation 31, for interfering with lock-gearings, &c.		Regulation 32, for being overloaded.		Regulation 33, for not having the license on board.		Regulation 36, damaging public works.	
	Boat number.	Number of days stopped.	Boat number.	Number of days stopped	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.	Boat number.	Number of days stopped.
Passenger boats	11	15	38	7	T.T. 11,759	4	174	4	T.T. 12,005	1	107	7	13	10	9	1	62	1
	T.T. 455	15	..	..	T.T 372	15	100 G.D.	4	T.T. 12,006	1	..	..	294	10	111	1	..	..
	..	..	..	..	27 G.D.	30	T.T. 384	3	T.T. 191	7	..	..	T.T. 52	10	77 K	1	..	..
	..	..	..	..	214 G.D.	15	550	4	29 G.D.	1	..	..	T.T. 49	15	414 G.D.	1	..	..
	..	..	..	..	T.T. 11,906	15	553	4	26 G.D.	60	..	..	186	5	..	..	..	..
	..	..	..	..	101	5	570	5	29 G.D.	60	..	..	43	10	..	..	..	..
	..	..	..	..	T.T. 464	15	585	5	21 G.D.	15	..	..	132	4	..	..	..	..
	..	..	..	..	..	..	16	3	T.T. 12,005	30	..	..	90	10	..	..	..	..
	..	..	..	..	..	..	20	15	T.T. 12,006	30	..	..	11	15	..	..	..	..
	..	..	..	..	..	..	..	..	8 G.D.	15	..	..	105	15	..	..	..	..
	..	..	..	..	..	..	..	..	T.T. 369	15	..	..	..	..	..	..	..	..
	..	..	..	..	..	..	..	..	T.T. 395	15	..	..	..	..	..	..	..	..
Cargo boats	..	..	..	..	351	15	..	..	..	..	..	..	..	..	..	..	..	..
	..	..	..	..	237	2	..	..	..	..	..	..	..	..	..	..	..	..
	..	..	..	..	252	2	..	..	..	..	..	..	..	..	..	..	..	..
	..	..	..	..	371	2	..	..	..	..	..	..	..	..	..	..	..	..
	..	..	..	..	14	2	..	..	..	..	..	..	..	..	..	..	..	..

No. 154 I.

Submitted to Government.

Chepâk,
15th October 1888.

(Signed) G. T. WALCH,
Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 19th October 1888, No. 619 I., Public Works.

Recorded.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, I Circle.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 19th.

Recd. *Encl.*

G.O., 19th Oct. 1888, No. 619 I.

OCTOBER.

Godavari Delta System

Letter from the Superintending Engineer, I Circle, submitting statements of Navigation receipts and charges appertaining to the — for 1887-88.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Read—the following papers:—

Office note from the Examiner, Public Works Accounts, dated Madras, 2nd October 1888, No. 2344.

ENCLOSURES.

MADRAS PRESIDENCY.

STATEMENT showing the Financial results of Irrigation Works in India for and up to end of 1887-88.

Table I.—Principal results of operation for the year ended 31st March 1888.

Irrigation works.	Mileage in operation.		Direct capital outlay during the year 1887-88 including cost of establishment and tools and plant.	Gross receipts, direct and indirect, from all sources.	Working expenses.	Net revenue excluding charges for interest.	Interest at 4 per cent. on direct capital outlay at commencement of the year and at 2 per cent. on outlay during year.	Surplus revenue after paying interest on direct capital outlay.		Excess charge including interest on direct capital outlay.		Area of land irrigated during the year.	Gross receipts per acre irrigated.	Working expenses excluding interest per acre irrigated.	Percentage of working expenses on gross receipts.
	Main canal.	Distributaries.						Amount.	Percentage on total sum at charge.	Amount.	Percentage on total sum at charge.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MAJOR IRRIGATION WORKS.	MILES.	MILES.	RX.	RX.	RX.	RX.	RX.	RX.		RX.		ACRES.	£ s. d.	£ s. d.	
Productive Public Works.															
Godávari delta system ..	506	1,659	19,422	2,05,904	61,301	1,44,603	42,274	1,02,329	(c) ..	..	..	608,696	0 6 9	0 2 0	29·8
Kistna do. ..	374	750	41,306	1,43,589	39,585	1,04,004	30,430	73,574	(c) ..	..	..	387,505	0 7 5	0 2 1	27·6
Cauvery do. ..	428	1,173	449	65,934	5,108	60,826	6,620	54,206	(c) ..	..	..	937,634	0 1 5	0 0 1	7·7
Pennér anicut system ..	22	120	6,032	13,877	970	12,907	6,138	6,769	5·59	..	..	64,987	0 4 3	0 0 4	6·9
Srívaikuntham anicut system.	28	62	1,363	10,910	2,160	8,750	5,345	3,405	2·28	..	..	40,632	0 5 4	0 1 1	19·8
Sangam anicut system ..	9	168	13,075	8,551	4,792	3,759	11,135	..	..	7,376	1·96	51,893	0 3 4	0 1 10	56·04
Kurnool canal	190	313	− 1,066	6,426	14,018	− 7,592	86,600	..	..	94,192	3·61	21,927	0 5 11	0 12 9	218·1
Barúr tank project	7	24	4,043	− 30	− 4	− 26	1,148	..	..	1,174	3·37	974	..	..	6·9
Periyár project (a)	..	..	27,099	..	..	..	542	..	..	542	1·97	..	..	..	..
Total ..	1,564	4,269	1,11,723	4,55,161	1,27,930	3,27,231	1,90,232	2,40,283	..	1,03,284	..	2,114,248	..	..	28·1
Protective Public Works.															
Rushikulya project (a) ..	..	..	25,457	..	..	..	2,710	..	..	2,710	2·68	..	..	..	..
MINOR WORKS AND NAVIGATION.															
Provincial.															
Chembrambakam tank ..	27	..	..	3,256	− 241	3,497	2,498	999	1·39	..	..	16,186	0 4 0	..	..
Pálár anicut system ..	28	151	4,543	12,796	6,598	6,198	6,878	..	..	680	·94	91,479	0 2 9	0 1 5	51·6
Pelandorai anicut system ..	15	48	580	646	1,326	− 680	1,578	..	..	2,258	2·61	3,763	0 3 5	0 7 1	205·3
Madras water-supply and irrigation extension project ..	10	..	..	1,856	1,635	221	6,063	..	..	5,842	1·98	9,235	0 4 0	0 3 6	88·1
Buckingham canal (b) ..	262	..	30,331	6,752	13,267	− 6,515	25,640	..	..	32,155	3·43	..	..	..	196·5
Chilka lake canal	9	..	98	..	38	− 38	97	..	..	135	5·06	..	..	..	..
West Coast canal	..	..	50	..	..	..	16	..	..	16	3·52	..	..	..	..
Lower Coleroon	..	..	− 12	..	..	..	161	..	..	161	3·77	..	..	..	..
Vedarniem canal	32	..	..	62	615	− 553	..	..	..	553	85·34	..	..	..	991·9
Kovur-Manjair junction canal.	9	..	22	..	..	..	242	..	..	242	3·76	..	..	..	..
Total ..	392	..	35,612	25,368	23,238	2,130	43,173	999	..	42,042	..	120,663	..	..	91·6

(a) These systems are under construction.
(b) Includes grant-in-aid from Famine Relief funds.
(c) No percentages can be shown here, the total sum at charge in column 8 of table III resulting in *minus* entries.

Table II.—General Financial results of the several undertakings to 31st March 1888.

Irrigation works.	Estimated cost of construction excluding indirect charges.	Date of completion of works.	CAPITAL OUTLAY INCLUDING COST OF ESTABLISHMENT AND TOOLS AND PLANT. At commencement of 1887-88.	At close of 1887-88.	Capitalised value of land revenue on land occupied by canal, leave and pension allowances.	Excess interest over net revenue in past years.	Total sum at charge against the work at end of 1887-88.	Interest at 4 per cent. on sum at charge at end of 1887-88.	Surplus for the year of net revenue over interest on total sum at charge.	Excess for the year of interest on total sum at charge over net revenue.	Capitalised value at 4 per cent. of net revenue excluding charges for interest.	Surplus sum at credit in excess of total sum at charge against the work.	Excess sum at charge over capitalised value of net revenue.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
MAJOR IRRIGATION WORKS.	RX.		RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.
Productive Public Works.													
Godávari delta system ..	11,08,933	1846-47	10,47,135	10,66,557	1,86,825	− **20,74,873**	− **8,21,491**	− **32,860**	1,77,463	..	36,15,075	44,36,566	..
Kistna do. ..	13,91,978	1855-56	7,40,097	7,81,402	59,536	− **8,55,716**	− **14,778**	− **591**	1,04,595	..	26,00,100	26,14,878	..
Cauvery do. ..	1,66,293	1836-37	1,65,267	1,65,716	12,338	− **15,00,759**	−**13,22,705**	− **52,908**	1,13,734	..	15,20,650	28,43,355	..
Penner anicutt system ..	1,61,279	1860-61	1,50,425	1,56,457	24,092	− **59,624**	1,20,925	4,837	8,070	..	3,22,675	2,01,750	..
Srívaikuntham anicut system.	1,36,152	1870-71	1,32,957	1,34,320	10,031	5,075	1,49,426	5,977	2,773	..	2,18,750	69,324	..
Sangam anicut system ..	2,89,644	1884-85	2,71,833	2,84,908	64,730	26,213	3,75,851	15,034	..	11,275	93,975	..	2,81,876
Kurnool canal	Purchased (*b*)	1882-83	21,65,546	21,64,480	(*c*) ..	4,41,351	26,05,831	1,04,233	..	1,11,825	− **1,89,800**	..	27,95,631
Barur tank project ..	40,000	1887-88	26,687	30,731	1,639	2,567	34,937	1,397	..	1,423	− **650**	..	35,587
Periyár	5,42,500	..	..	27,099	339	..	27,438	1,098	..	1,098	..	..	27,438
Total ..	38,36,779	..	46,99,947	48,11,670	3,59,530	− **40,15,766**	11,55,434	46,217	2,81,014	..	81,80,775	70,25,341	..
Protective Public Works.													
Rushikulya project	2,60,529	..	55,019	80,476	17,503	3,059	1,01,038	4,042	..	4,042	..	..	1,01,038
MINOR WORKS AND NAVIGATION.													
Provincial.													
Chembrambaukam tank ..	65,531	1870-71	62,443	62,443	11,216	− **1,933**	71,726	2,869	628	..	87,425	15,699	..
Pálár Anicut System ..	1,89,492	1853-54	1,69,673	1,74,216	9,284	52,000	2,35,500	9,420	..	3,222	1,54,950	..	80,550
Pelandorai anicut system ..	40,500	1875-76	39,158	39,738	4,117	42,648	86,503	3,460	..	4,140	− **17,000**	..	1,03,503
Buckingham canal (*a*) ..	8,61,200	1837-38	6,25,845	6,56,176	41,926	2,37,092	9,35,194	37,408	..	43,923	− **1,62,875**	..	10,98,069
Madras water-supply and irrigation extension project ..	1,58,100	1870-71	1,51,583	1,51,583	23,822	1,19,736	2,95,141	11,806	..	11,585	5,525	..	2,89,616
(*d*) Gánjam-Gopálpúr canal.	43,100	..	2,074	2,074	..	333	2,407	96	..	..	..	..	2,407
(*d*) Chilka lake canal ..	..	..	2,385	2,483	..	184	2,667	106	..	144	− **950**	..	3,617
(*d*) West Coast canal ..	..	..	378	428	..	26	454	18	..	18	..	..	454
(*d*) Lower Coleroon ..	..	..	4,022	4,010	..	254	4,264	171	..	171	..	..	4,264
(*d*) Kovur-Munjair junction canal	..	..	6,04[illegible]	6,062	..	361	6,423	257	..	257	..	..	6,423
(*d*) Vedarniem canal ..	..	..	..	..	..	648	648	26	..	579	− **13,825**	..	14,473
Total ..	13,57,923	..	(*e*) 10,63,601	10,99,213	90,365	4,51,349	16,40,927	65,637	..	63,411	53,250	..	15,85,270

Note.—This statement includes Kurnool canal purchased from the late Madras Irrigation and Canal Company. The result of taking over this work in 1882-83 was to reduce the percentage of net revenue on capital cost of irrigation works in Madras for which capital and revenue accounts are kept from 14·9, the average of the three years immediately preceding the transfer to 5·4.

(*a*) Includes outlay from Famine Relief fund.
(*b*) The year in which the canal was purchased.
(*c*) The capital outlay being purchase cost, no indirect charges were made.
(*d*) These projects have not yet matured.
(*e*) Exclusive of outlay in the late "B" and "C" project divisions and on the Naringeput project shown in 1886-87.

Table III.—Main heads of Revenue and Working expenses for the year ended 31st March 1888.

Irrigation works.	Revenue. Irrigation. Water-rates directly paid.	Irrigation. Share of land revenue.	Irrigation. Total.	Navigation.	Plantation and lands.	Water-power.	Miscellaneous.	Total.	Remission of revenue.	Net revenue.
1	2	3	4	5	6	7	8	9	10	11
MAJOR IRRIGATION WORKS.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.
Productive Public Works.										
Godávari delta system	(a) 1,78,629	14,900	1,93,529	10,437	297	..	1,697	2,05,960	(b) 56	2,05,904
Kistna do.	(a) 1,24,776	14,459	1,39,235	3,180	160	..	1,054	1,43,629	40	1,43,589
Cauvery do.	(a) 52,177	13,101	65,278	..	301	..	356	65,935	1	65,934
Pennér anicut system	(a) 12,290	1,587	13,877	..	..	..	..	13,877	..	13,877
Srívaikuntham anicut system	(a) 10,540	209	10,749	..	..	..	161	10,910	..	10,910
Sangam do.	(a) 8,193	271	8,464	..	..	..	87	8,551	..	8,551
Kurnool canal	5,628	..	5,628	187	..	..	737	6,552	126	6,426
Barur tank project	— 30	..	— 30	..	..	..	..	— 30	..	— 30
Total ..	3,92,203	44,527	4,36,730	13,804	758	..	4,092	4,55,384	223	4,55,161
MINOR WORKS AND NAVIGATION.										
Provincial.										
Chembrambaukam tank	(a) 3,176	75	3,251	..	..	..	5	3,256	..	3,256
Pálár anicut system	(a) 11,351	1,355	12,706	..	..	..	90	12,796	..	12,796
Pelandorai do.	(a) 628	13	641	..	..	..	5	646	..	646
Buckingham canal	..	..	..	6,650	..	..	264	6,914	162	6,752
Madras water-supply and irrigation extension project	(a) 867	44	911	..	..	..	945	1,856	..	1,856
Chilka lake canal	..	..	..	..	..	..	..	..	..	..
Vedarniem do.	..	..	..	62	..	..	..	62	..	62
Total ..	16,022	1,487	17,509	6,712	..	..	1,309	25,530	162	25,368

(a) These water-rates are collected in the Civil Department with share of land revenue and included in finance and revenue accounts as share of land revenue due to irrigation after deduction of collection charges.

(b) Represents *bonâ fide* cash refunds charged to the budget grant.

Table III.—Main heads of Revenue and Working expenses for the year ended 31st March 1888—cont.

Irrigation works.	Working expenses.														Grand Total R. and M.
	Revenue management.					Maintenance of works.									
	Establishment charges.				Total R.	Establishment charges.				Works.	Repairs.	Tools and plant.	Plantation.	Total M.	
	Direction.	Execution.	Navigation.	Civil officers.		Direction.	Execution.	Medical.	Total.						
	12	13	14	15	16	17	18	19	20	21	22.	23	24	25	26
MAJOR IRRIGATION WORKS.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.	RX.
Productive Public Works.															
Godávari delta system	2,392	9,569	..	(c) 9,677	21,638	1,439	5,755	..	7,194	2,364	25,234	4,823	48	39,663	61,301
Kistna do.	1,585	6,341	..	6,962	14,888	815	3,262	..	4,077	1,403	16,372	2,845	..	24,697	39,585
Cauvery do.	639	2,557	..	3,264	6,460	— **48**	— **193**	..	— **241**	3,642	— **4,645**	— **108**	..	— **1,352**	(d) 5,108
Pennér anicut system	148	590	..	694	1,432	— **17**	— **67**	..	— **84**	70	— **435**	— **13**	..	— **462**	(d) 970
Srívaikuntham anicut system	130	518	..	537	1,185	37	147	..	184	142	657	— **8**	..	975	(d) 2,160
Sangam do.	100	400	..	423	923	145	579	..	724	..	3,145	..	..	3,869	4,792
Kurnool canal	86	344	..	..	430	414	1,657	..	2,071	2,519	8,659	339	..	13,588	14,018
Barur tank project	..	— **2**	..	— **2**	— **4**	..	..	..	..	..	..	..	..	..	— **4**
Total ..	5,080	20,317	..	21,555	46,952	2,785	11,140	..	13,925	10,140	48,987	7,878	48	80,978	1,27,930
MINOR WORKS AND NAVIGATION.															
Provincial.															
Chembrambaukam tank	..	..	..	163	163	— **15**	— **59**	..	— **74**	— **171**	— **151**	— **8**	..	— **404**	(d) — **241**
Pálár anicut system	2	7	..	635	644	223	891	..	1,114	1,271	3,574	— **5**	..	5,954	(d) 6,598
Pelandorai do.	..	..	..	32	32	48	194	..	242	— **44**	1,096	..	..	1,294	(d) 1,326
Buckingham canal	138	553	..	..	691	458	1,833	..	2,291	508	9,395	319	63	12,576	13,267
Madras water-supply and irrigation extension project	19	76	..	46	141	56	224	..	280	— **52**	1,272	— **6**	..	1,494	(d) 1,635
Chilka lake canal	..	..	..	..	..	1	6	..	7	..	31	..	..	38	38
Vedarniem do.	1	5	..	..	6	23	91	..	114	..	495	..	..	609	615
Total ..	160	641	..	876	1,677	794	3,180	..	3,974	1,512	15,712	300	63	21,561	23,238

(c) Denotes the share of collection charges in the Civil department.
(d) After deduction of old maintenance charges. The figures in columns 12 and 17 represent one-fifth of the total establishment charges.

MADRAS,
2nd October 1888.

(Signed) C. H. P. CHRISTIE, Major, R.E.,
Examiner, Public Works Accounts.

Office note from the Examiner, Public Works Accounts, dated 15th October 1888, No. 2414.

Order—dated 24th October 1888, No. 621 I., Public Works.

Ordered that the statements received from the Examiner of Public Works Accounts be forwarded to the Government of India with reference to their Circular No. XXIII of 1881.

(Here enter No. 622 I., dated 24th October 1888.)

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
To Superintending Engineers.
To the Examiner, Public Works Accounts.
,, Revenue Department.

Endorsement—dated 24th October 1888, No. 622 I., Public Works.

Forwarded.

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 24th.

Recd. *Encl.*

G.O., 24th Oct. 1888, Nos. 621 I, 622 I.

OCTOBER.

Irrigation Works

Forwarding statements of financial results of — for 1887-88.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

From J. W. RUNDALL, Esq., M.I.C.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 14th September 1888, No. 1377 T.J.

I have the honor to submit, for early sanction, the accompanying estimate of Rs. 10,626 for widening and raising the Kodamurti right bank from its head to road No. 4, with a new alignment to throw forward the portion just above the said road No. 4 in the Tanjore division.

2. The Executive Engineer originally sent in two estimates, one including the making up of the bank or the existing crooked line near road No. 4, and, by an oversight, this estimate, which was within my powers, was sanctioned. It is, however, considered advisable to throw forward the bank clear of the houses which stand on the existing bank. This involves extra expenditure which brings the estimate above Rs. 10,000.

3. The necessity for the new bank proposed is explained in the report which accompanies the estimate. It would also appear that the existing bank just above road No. 4 was nearly topped during July last and is likely to breach at any time. It is, therefore, necessary to put in hand the work on this portion.

4. The work will be entered in the budget for the ensuing year; but, in order that the above portion may be put in hand, I request sanction to the transfer to this work of the grant of Rs. 1,000 for "fixing bench marks and furlong stones along the Cauvery and its branches"—*vide* item No. 65, pages 11 and 15 of budget of 1888-89. The measurement of the river not having been completed during the dry season, it is not expected that this grant will be utilised this year.

ENCLOSURE.

Report by the Superintending Engineer, VI Circle, on the estimate for raising and widening the Kodamurti right bank from its head to road No. 4 in Tanjore district, Rs. 10,626.

The estimate is prepared with reference to para. 21 of the Irrigation Chief Engineer's note printed in G.O., No. 408 I., of 26th May 1882.

2. It is proposed to make height of the bank 4 feet above M.F.L. with a top width of 6 feet and side slopes 2 to 1 except for a length of 3,565 feet from cross section 125 to 136 where the road runs along the toe of the bank, which should be made 16 feet wide so as to carry the road on the bank, the extra cost of which, viz., Rs. 290, has been sanctioned by the District Board in their Proceedings of the 18th May 1888. Hence the net charge for Imperial funds which will be Rs. 10,336.

3. Just above road No. 4 the bank continually breaches, and it is believed that the villagers make the breaches in order to save their houses. It is therefore proposed to throw forward this portion of the bank. This necessitates an entirely new line of embankment for a length of 1,600 feet. The old bank has houses on it and the more direct new bank is in every way preferable.

4. The rates are fair and the estimate is recommended for sanction.

(Signed) J. W. RUNDALL,
Superintending Engineer, IV Circle.

TRICHINOPOLY,
1st September 1888.

No. 153 I.

Submitted to Government with a recommendation that the estimate forwarded by the Superintending Engineer be sanctioned.

Chepâk,
15th October 1888.

(Signed) G. T. WALCH,
Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 25th October 1888, No. 633 I., Public Works.

The following estimate, amounting to Rs. 10,626, is sanctioned, Rs. 290 of the proposed outlay being contributed from Local Funds:—

Irrigation.
43. Minor Works and Navigation.
Agricultural works.
Original works.
River embankments.

Widening and raising the Kodamurti right bank from its head to road No. 4, estimate ... ... Rs. 10,626

2. This sanction has been registered as No. 113 I. of 1888-89.

3. The transfer of funds proposed in the last paragraph of the Superintending Engineer's letter is sanctioned.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, VI Circle, with 37 enclosures.
,, Examiner of Public Works Accounts, with one abstract estimate.
,, Revenue Department.
,, Local and Municipal Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 25th.

Recd. *Encl.*

G.O., 25th Oct. 1888, No. 633 I.

OCTOBER.

Kodamurti Right Bank, Tanjore District

Estimate for widening and raising the—, sanctioned, as also certain transfer of funds.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following paper :—

No. 902 P.R.

Report on Progress for September 1888.

The month has been on the whole a somewhat disappointing one; the weather was fine during the first week, and it was hoped that good progress would be made with the buildings and the dams on the Muliya Panjan, but the middle and end of the month were rainy, though much less so than July and August.

2. We were also disappointed with regard to labor, a large number of coolies, including about sixty masons (a class of men who are much wanted), who were brought from Coimbatore by a contractor, having taken fright on arriving at the Periyár and deserted.

3. Nevertheless the progress has, on the whole, been fair with the locks and one dam on the Muliya Panjan and with the temporary dam on the Periyár, the foundations of the latter having been put in for nearly half the width of the river-bed.

4. If October is a fine month, it is hoped that the works on the Muliya Panjan will be completed and the temporary dam on the Periyár raised to at least 10 feet throughout its length before the setting in of the north-east monsoon, but much depends upon the date of the latter.

5. The removal of earth at the dam-site has been completed as far as it is intended to go until the water is raised by the temporary dam, and the ground for the main workshop has been levelled and the excavation of foundations begun.

6. Fair progress has been made with the removal of earth and stone for the right bank escape; this work is not pressing, as there is no object in collecting stone greatly in advance of our power of using it up.

7. The progress with the buildings has been fair though not as rapid as could be wished ; but it is useless to attempt to work quickly in such weather as we have had.

8. The difficulty and cost of carriage of materials has been a serious annoyance, especially in the case of lime, which has to be brought from near Gúdalúr, the cost of cart-hire on the ghât being great, while the cost of carriage by pack-donkeys, the only means available from Thekady to the Periyár, is greater still. The latter difficulty will disappear with the completion of the Muliya Panjan works in November or December and the former with the erection of the wire tramway about the same time or a little later; but at present it is the supply of lime which practically rules the rate of progress with the masonry works.

9. Little has been done at the southern water-shed cutting beyond the removal of earth above the rock, as it is not desirable to accumulate any more stone there until we are prepared to take it away for use in the main dam. At the northern cutting good progress has been made, and it is probable that this cutting will be finished in time to allow the tunnel to be started as soon as the machinery is erected, which will be about the end of the year.

10. The want of subordinates has been greatly felt, there having been only three (one of whom is a young temporary overseer of no experience) on the head-works throughout the month, and much credit is due to the actual staff for the way in which they have kept the work going.

11. The elephants have been unusually troublesome; early in the month they broke into a shed at No. 2 dam, demolished the shed, and took out two barrels of Portland cement (a material for which they seem to have a particular weakness), smashed one barrel to pieces and rolled the other down the bank into the river; two days later they came along the path to within about half a mile of the main camp and pulled up eight furlong stones in succession. these stones being of cut granite set in concrete. A few days later still they again attacked the camp at No. 2 dam, but were driven off by the coolies. This last attack took place just before the arrival of the coolies from Coimbatore, mentioned above, and had, it is believed, a good deal to do with their desertion.

12. Work has been begun in the plains, but there has of course been little appreciable progress.

(Signed) J. PENNYCUICK, Colonel, R.E.,
Superintending Engineer,
Periyár Project Works.

Periyar,
10th October 1888.

To the Chief Engineer for Irrigation.

No. 156 I.

Submitted for the information of Government.

2. The strength of the upper subordinate establishment as asked for this season by Colonel Pennycuick has been made up, two upper subordinates having been lately ordered to join the No. 1 or "Hills division" and three, the No. 2 or "Plains division."

(Signed) G. T. WALCH,
Ag. Chief Engineer for Irrigation.

Chepâk,
17th October 1888.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

Order—dated 25th October 1888, No. 634 I., Public Works.

Recorded.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, Periyár Project Works.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 25th.

Recd. *Encl.*

G.O., 25th Oct. 1888, No. 634 I.

OCTOBER.

Periyar Project Works

Report of progress on the — for September 1888, recorded.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

Telegram from Kodimicherla Subbarayadu and Company, Cocanada, to His Excellency the Right Honorable the Governor in Council.

From G. T. WALCH, Esq., Superintending Engineer, I Circle, to the Chief Engineer and Secretary to Government, Public Works Department, dated Dowlaishweram, 19th September 1888, No. 1736 G.D.

With reference to memorandum No. 638, dated 8th September 1888, on telegram (herewith returned) of 7th instant from Kadimicherla Subbaroyudu and Co., I have the honor to inform you that the channel referred to by the petitioner is one lately dug by the Local Funds to take the place of the former one which they occupied for the road from Cocanada to Kovur lock.

2. That channel was originally devoted exclusively to carrying fresh water from the Cocanada canal above Kovur lock to Jaganaikpuram, the portion of Cocanada south of the river.

3. When that channel was improved and had a new head sluice built to it, the Revenue Department recommended that the owners of certain lands commanded by it should be allowed to irrigate from it as the water sent down the channel seemed in excess of the requirements of the town.

4. To that course this department assented, and the then Executive Engineer in charge of the Eastern division wrote the enclosed letter (No. 1079, dated 16th August 1879) to the Collector on the subject, to para. 2 of which particular attention is directed.

5. It now appears that the petitioner put two instead of the one palmyra spout allowed him at the head of his channel and otherwise behaved in a way which the Chairman of the Municipal Council, Cocanada, states (in his No. 170, dated 26th July 1888) seriously diminished the water-supply to the town, and consequently steps were taken through the Collector to put a stop to the petitioner's unauthorised proceedings.

6. It will be well if in the approaching fasli the Revenue Department refuses all application for allowing wet cultivation on the land in question and will so inform this department.

Note by the Acting Chief Engineer for Irrigation.

No. 159 I.

From the papers noted in the margin, it appears (*a*) that the fields referred to receive their supply from the channel specially constructed for conveying fresh water from the Cocanada canal to Jaganaikpúr, the southern portion of the town of Cocanada, (*b*) that when in 1879 irrigation was, at the request of the Collector, permitted from this channel, this department specially laid down that at the head

Telegram, dated 7th September 1888, from Kodimicherla Subbarayadu and Company, Cocanada, to His Excellency the Right Honorable the Governor in Council.
Letter from the Superintending Engineer, I Circle, No. 1736, dated 19th September 1888.

of each off-take there should be allowed only one palmyra spout not to exceed a certain specified size, and that intending irrigators should "be distinctly warned that they will only be permitted to keep the spouts open when the water can be spared by Jaganaikpúr, and that if from improper treatment or other cause these spouts are found to injuriously affect the interests of the public in that town, the spouts will be removed and the branch channels from them closed," (*c*) that the petitioner "put two instead of one palmyra spout allowed him at the head of his channel and otherwise behaved in a way which the Chairman of the Municipal Council, Cocanada, states seriously diminished the supply to the town and consequently steps were taken through the Collector to put a stop to the petitioner's unauthorised proceedings."

2. It is considered that the action of the municipality in the matter should not be interfered with by this department.

3. The Superintending Engineer's recommendation that in the approaching fasli the Revenue authorities should refuse "all applications for allowing wet cultivation on the land in question" is approved.

CHEPÂK,
19th October 1888.

(Signed) G. T. WALCH,
Ag. Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 25th October 1888, No. 635 I., Public Works.

The petitioners will be informed that the Government decline to interfere with the orders of the local authorities on this matter. It appears that the ryots were only permitted to use the water under restrictions and conditions.

2. The attention of the Collector of the Godávari district is directed to paragraph 6 of the Superintending Engineer's letter.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Revenue Department.
" Petitioners.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 25th.

Recd. *Encl.*

G.O., 25th Oct. 1888, No. 635 I.

OCTOBER.

Water-supply

Orders on petition from Kodimicherla Subbarayadu and Company, Cocanada, complaining of the — to their fields.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers :—

From the Officiating Director of the Indian Marine, to the Chief Engineer for Irrigation, dated Bombay, 3rd September 1888, No. 3172.

Forwarded * to the Chief Engineer for Irrigation, Madras, with reference to correspondence ending with his telegram, dated 21st August 1888, observing that a vessel according to plan and specification enclosed can be built for Rs. 29,500 and completed in about five months from date of order. The office memorandum gives the constructor's remarks on the chief points that were originally laid down regarding the construction of a tug and to which I had specially drawn his attention.

* Specification for a Tug steamer.
Plan for a Tug steamer.
Office memoranda by constructor, Kidderpore dockyard, dated 15th and 29th August 1888.
(To be returned).

2. I would now recommend a fresh start on these plans, and that early orders may be sent to me, if the work is to be taken in hand.

From G. T. WALCH, Esq., Superintending Engineer, I Circle, to the Chief Engineer for Irrigation, dated Dowlaishweram, 22nd September 1888, No. 1725 G.D.

With reference to your No. 1/83, dated 7th September 1888, and enclosures, herewith returned, I have the honor to say that I considered the design and specification for the "tug" suitable and I trust she may be put in hand and supplied soon.

2. I would, however, suggest for *decision by the Indian Marine Department*, whether considering the rough work the "tug" will have to do and the fact (mentioned in para. 10 of my remarks on the former design) that she "will be liable 'to take the ground' on sand banks occasionally," it will not be advisable to make her "bottom plating" somewhat thicker than the $\frac{1}{4}''$ and $\frac{3}{16}''$ provided in the specification; such extra thickness might be given without appreciably increasing her draught if the 14′ of the "breadth moulded" in the design be increased to 14′ 6″, which will be unobjectionable.

3. The "tug" should be completed in the dockyard and sent down to Cocanada under steam, as were the two much smaller launches supplied from the dockyard in 1878-79. The safest time for steaming down is between 1st January and end of March.

4. At Cocanada the paddle boxes, &c., would have to be taken off and total width *over all* reduced to *under* * 20′ as she would have to be towed up through the canal with locks only 20′ wide; at Dowlaishweram where she enters the river, the paddle boxes, &c., would be put on again.

* Requires particular attention.

No. 155 I.

Submitted to Government.

2. The amount of Rs. 29,500, as estimated by the Director of Indian Marine, is for the mere construction of the tug. There will, however, be considerable expenditure incurred in transporting her, when complete, to Dowlaishweram, and to meet the cost

of such transport it is recommended that Rs. 1,500 be added to the above estimate. In para. 2 of their letter, communicated with G.O., No. 2801 W., dated 10th September 1888, the Government of India in the Marine Department state with reference to the rules communicated in Marine Department No. 10 P.T., dated 4th June 1877, that after the details of construction of the tug have been settled, the matter should be submitted to them for final orders with information regarding cost and intended employment of the vessel, source from which cost is to be met, and any other particulars which will enable them to judge of the necessity for the vessel. With reference to this request it should be noted that the Government of India decided in their Public Works Department letter No. 194 A. I., dated 27th July 1877, communicated with G.O., No. 252 I., dated 27th August 1877, that their Financial resolution, No. 3665, dated 31st October 1876, printed with G.O., No. 1175, P. W D., dated 5th April 1877, on the subject of the control of steamers and other vessels by the Military (Marine) Department was not intended to apply to the floating plant required for irrigation works, although the Marine Department should, as a rule, be referred to for advice in regard to the construction of vessels required for such works. The construction of the tug, which is required for the Godávari delta, may, therefore, be sanctioned by this Government. As owing to a misunderstanding the commencement of the tug has been delayed rather over one year, orders for her immediate construction should now be given, so that she may without fail be available for work next season. The information required by the Government of India is contained in the note printed with G.O., No. 477 I., dated 8th August 1887, a copy of which was forwarded to them with letter No. 478 I. of the same date. It may here be noted that as the steamer "Thistle" has since ceased to exist, having been dismantled in accordance with the sanction given in the above Government Order, the steam tug is now all the more urgently required. The estimated cost of the tug is to be met from the amount sanctioned for tools and plant in the Godávari delta completion estimates.

CHEPÂK,
15th October 1888.

(Signed) G. T. WALCH,
Acting Chief Engineer for Irrigation.

To the Acting Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 25th October 1888, No. 636 I., Public Works.

The design for the steam "tug" required for the Godávari delta is approved and her construction in the Marine Dockyard at an estimated cost of Rs. 29,500 is sanctioned. A sum of Rs. 1,500 is also sanctioned to meet the probable expenses for her conveyance to Dowlaishweram when completed, making a total of Rs. 31,000. The estimate, amounting to Rs. 48,573, sanctioned in G.O., No. 663 I., dated 26th October 1887, is cancelled, and the difference of Rs. 17,573 between the present and former estimates will be credited to the balance available to meet unforeseen demands for the Godávari delta under Tools and Plant which will then be increased to Rs. 35,010.

2. This sanction has been registered as No. 122 I. of 1888-89, and classified as shown below—

Capital expenditure on Public Works (not charged against Revenue).
49. Irrigation.
Godávari delta system.
III. Tools and plant.
9. Navigation plant.

	RS.
Constructing a steam tug, Estimate	29,500
Cost of conveyance to Dowlaishweram	1,500
Total ...	31,000

3. Ordered that a copy of these Proceedings be forwarded to the Director of Indian Marine accompanied by the design, specification and official memoranda relating to the tug received from him, with the request that the suggestions contained in para. 2 of the Superintending Engineer's letter may be attended to during the construction of the vessel, and that, on completion, she be despatched to Cocanada under steam, very special attention being given to the remarks made by the Superintending Engineer in para. 4 of his letter.

4. Ordered that the following letter be sent to the Government of India :—

(Here enter No. 637 I., dated 25th October 1888.)

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Director of the Indian Marine, Bombay, with three enclosures.
" Superintending Engineer, I Circle.
" Chief Engineer for Irrigation.
" Examiner, Public Works Accounts.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 25th.

Recd. *Encl.*

G.O., 25th Oct. 1888, No. 636 I.

OCTOBER.

Steam Tug for the Godavari

Design for —, approved; and its construction in the Marine Dockyard at a cost of Rs. 29,500, sanctioned.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

Letter—from

G. T. WALCH, Esq.,

Acting Secretary to the Government of Madras,
Public Works Department (Irrigation Branch),

To

The SECRETARY to the GOVERNMENT of INDIA,
Military (Marine) Department.

Sir,

With reference to your letter No. 884, dated 16th August 1888, I am directed to forward herewith a copy of Proceedings of the Madras Government, No. 636 I., dated 25th October 1888, and to state that the estimate, amounting to Rs. 29,500, for constructing a steam tug for the Godávari delta according to the design received from the Director of Indian Marine, Bombay, has been sanctioned, the cost being met from the completion estimates of the Godávari delta as it is desirable that her construction should be commenced without further delay. I am also to observe that the rules, referred to by the Government of India regarding the control to be exercised over the construction of steamers by the Military (Marine) Department, are stated in their Public Works Department letter, No. 194 A.I., dated 27th July 1877, to be not applicable to vessels required for irrigation works. The note printed with Proceedings of the Madras Government, No. 477 I., dated 8th August 1887, a copy of which was forwarded with letter No. 478 I., of the same date, from this Government, specifies how the vessel is intended to be employed.

I have the honor to be,
Sir,
Your most obedient servant,

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

Fort St. George,
25th October 1888.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 25th.

Recd. *Encl.*

25th October 1888, No. 637 I.

OCTOBER.

Steam Tug for the Godavari

Forwarding copy of Proceedings approving design for — and sanctioning its construction in the Marine Dockyard at a cost of Rs. 29,500.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper :—

From F. A. NICHOLSON, Esq., Acting Collector of Tinnevelly, to the Secretary to Government, Public Works Department, dated 14th October 1888, No. 295.

I have the honor to inform you that a piece of wet land measuring 4·09 acres in the inam village of Sedukkuvaithan, Tenkarai taluk, is required for the formation of the right flood bank of the Támbraparni. As it is desirable, in order to ensure to Government an indefeasible title, to acquire the land under the provisions of the Land Acquisition Act X of 1870, I herewith forward a draft declaration under section 6 of the Act, and request that you will be good enough to order the same to be published in the *Fort St. George Gazette*, and to authorise the Sub-Collector to perform the functions of the Collector under the Act for its acquisition.

Order—dated 25th October 1888, No. 638 I., Public Works.

Ordered that the notification, as amended, be published in the *Fort St. George Gazette.*

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
,, Superintending Engineer, VI Circle.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 25th.

Recd. *Encl.*

G.O., 25th Oct. 1888, No. 638 I.

OCTOBER.

Land

Notification of — required for formation of right flood bank of the Támbraparni river, ordered to be published in the *Fort St. George Gazette.*

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper:—

G.O., dated 11th October 1888, No. 5928, Revenue.

Read—also the following Proceedings of the Board of Revenue (Land Revenue), dated 13th August 1888, Mis. No. 4825.

From E. GIBSON, Esq., Collector of Tanjore, to the Secretary to Government, Public Works Department (through the Board of Revenue, Land Revenue), dated Tanjore, 27th July 1888, No. 463.

I have the honor to inform you that a piece of land measuring Acres 6 cents 25 in Yettayalur, Pallivilagam, &c., villages in Nannilam taluk is required for the straight cut of the Vetár in Pallivilagam limits, and as it is desirable, in order to ensure to Government an indefeasible title to it, to acquire the land under the provisions of the Land Acquisition Act (X of 1870), I herewith forward a draft declaration under section 6 of the Act that it is needed for a public purpose, and request that you will be good enough to order the same to be published in the *Fort St. George Gazette*.

2. I further request the orders of Government for its acquisition.

Read—again G.O., dated 20th August 1888, Mis. No. 4948, Revenue.

Read—also the following Proceedings of the Board of Revenue (Land Revenue), dated 28th September 1888, Mis. No. 5829.

H. S. Thomas, Esq., F.L.S., F.Z.S.

Read—the following letter from the Collector of Tanjore, dated 17th September 1888, No. 564.

Adverting to Board's Proceedings, No. 5287, dated 4th September 1888, I have the honor to report that the Head Assistant Collector, in whose division the lands to be acquired are situate, may be invested with the powers of a Collector under Act X of 1870 to take steps for the acquisition of the lands required for the work.

Resolution—dated 28th September 1888, Mis. No. 5829.

Submitted to Government with reference to G.O., dated 20th August 1888, No. 4948.

(A true Copy and Extract.)

(Signed) H. A. SIM,
Ag. Secretary.

Order—dated 11th October 1888, No. 5928, Revenue.

Transferred to the Public Works Department (Irrigation Branch).

(True Extract.)

(Signed) C. A. GALTON,
Ag. Secretary to Government.

ORDER—dated 25th October 1888, No. 648 I., Public Works.

Ordered that the notification, as amended, be published in the *Fort St. George Gazette.*

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, VI Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 25th.

Recd. *Encl.*

G.O., 25th Oct. 1888, No. 648 I.

OCTOBER.

Land

Notification of — required for the straight cut of the Vetár in the Tanjore district, ordered to be published in the *Fort St. George Gazette.*

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following paper :—

Office note from the Examiner, Public Works Accounts, dated Madras, 9th October 1888, No. 2384.

With reference to note under Code para. 352, clause (*c*) a statement of savings and excesses on completed works connected with the Irrigation and Navigation systems noted below is herewith submitted :—

Godávari delta system.
Kistna do.
Cauvery do.
Pennér anicut system.
Barur tank system.
Sangam anicut system.
Pelandorai do.
Palár do.
Buckingham canal system.

ENCLOSURE.

STATEMENT of Savings and Excesses on completed works, Capital Account, in 1887-88.

System.	Name of work.		Estimate.	Expenditure.	Excesses and Savings.
			RS.	RS.	RS.
Godávari delta system—Eastern section.	Constructing quarters for an overseer at Razol ..	..	580	480	100
	Bungalow at Prattipad	I. K.	579	500	79
	Bank canal, (up to 30th mile)—New side channel above Kowleswaram lock head sluice	3 C.	700	689	11
	Bank canal—				
	Pamarru channel head sluice	3 C.	1,350	1,347	3
	Chopella do.	3 C.	1,370	1,339	31
	Side channel from above Kowleswaram lock ..	..	500	525	— 25
	Bank canal extension—				
	Uppangala drain improving	4 L.	1,260	1,080	180
	Pillamba drain improvements	4 L.	1,430	1,449	—19
	Coringa canal channel from proposed sluice 31 miles left bank	3 L.	600	628	— 28
	Ingeram canal—Side channel from Yerrapothavaram north side channel dam to Duggadur channel	3 L.	500	417	83
	Mundapeta canal—				
	Rámachandrapur channel culvert	3 C.	2,600	2,235	365
	Tsodavaram channel head sluice	3 C.	535	537	— 2
	Taki drain—				
	Catch drain right bank above Kudupudi, 15 miles ..	4 L.	500	497	3
	Do. left bank from 15½ to 16½ miles ..	4 L.	500	441	59
	Drain to infall sluice left bank near end of Ingeram canal	4 L.	1,500	1,376	124
	Thulyabaga drain—				
	Tsodavaram drain improvements	4 L.	4,850	3,720	1,130
	Lolla drain extension	4 L.	850	829	21
Central section.	Amalapur canal—Fender pile foot-bridge at Ralli surplus.	2 I.	390	360	30
	Bank canal—				
	Vadapalam lock	2 I.	17,100	16,452	648
	Do. lock weir	2 I.	4,470	4,395	75
	Chintalanka—				
	Lock weir	2 I.	3,830	3,504	326
	Do. lascars' quarters at Lolla	2 I.	194	185	9
	Gunnaram canal—				
	Gunnaram aqueduct	2 F.	21,700	19,053	2,647
	Sakinettipalli sluice	2 D.	1,180	924	256

Statement of Savings and Excesses on completed works, Capital Account, in 1887-88—*cont.*

System.	Name of work.		Estimate.	Expenditure.	Excesses and Savings.
			RS.	RS.	RS.
Godávari delta system—*cont.* Western section.	Bank canal—Quarters for lock establishment at Latchmipalam lock	2 I.	1,370	1,304	66
	Ellore canal—				
	Under-tunnel No. 8	2 F.	1,365	1,327	38
	Do. ,, 10	2 F.	1,450	1,496	— 46
	Escape No. 3	2 H.	1,900	1,813	87
	Gonter drain—Baswarowkodu improvements near its junction with Gonter drain	4 L.	5,116	4,867	249
	Gostanadi and Velpur canal—				
	Compensation for land for improving Gostanadi bends	2 B.	1,200	513	687
	Do. do. for Vendra parallel channel ..	3 B.	783	707	76
	Vendra right bank channel sluice	3 C.	620	649	— 29
	Vendral left bank	3 C.	1,028	1,069	— 41
	Kalingulenkodu channel sluice	3 C.	568	575	— 7
	Mutamkodu do.	3 C.	947	988	— 41
	Tanduru do.	3 C.	771	814	— 43
	Muthamkodu branch of Advikodu dam at ½ mile ..	3 C.	305	304	1
	Viravasaram west side channel at 5 miles	3 C.	315	334	— 19
	Extension of Velpur canal, Gunipudi drain inlet ..	2 F (1).	670	668	2
	Vissakodu bridge constructing	2 G.	8,700	8,798	— 98
	Do. lock	2 I.	18,600	17,980	620
	Bhimavaram tidal lock	2 I.	24,500	20,718	3,782
	Extending Velpur canal from 36-30 to Yennamaderru drain	2 L.	17,314	16,927	387
	Narsápur canal—Ramasetwa channel excavation ..	3 L.	2,530	2,440	90
	Irlakodu drain—Compensation for land	4 B.	1,100	991	109
	Undi canal—				
	Compensation for land	2 B.	1,635	1,550	85
	Do. do.	3 B.	1,350	1,240	110
	Gopavaram channel, No. 2 dam	3 C.	219	227	— 8
	Kotapillai branch of Romana dam	3 C.	175	219	— 44
	Mahadavapatnam channel dam	3 C.	160	192	— 32
	Vendram channel, No. 1 dam	3 C.	290	292	— 2
	Do. ,, 2 do.	3 C.	300	282	18
	Kotapilli channel sluice	3 C.	406	409	— 3
	Yendagandi channel sluice	3 C.	440	524	— 84
	Kesavaram channel excavation	3 L.	1,100	747	353
	Bhimavaram branch channel extension	3 L.	1,210	1,203	7
	Vempad channel	3 L.	720	693	27
	Gollalakodu parallel channel excavation	3 L.	500	349	151
	Artamur branch channel excavation	3 L.	900	808	92
	Kolanapalli lanka channel	3 L.	4,500	3,356	1,144
	Madavaram channel	3 L.	1,500	1,435	65
	Singaragakodu improving	4 L.	1,470	1,467	3
	Venkaya and Weyeru canal—				
	Kappanapudi channel sluice	3 C.	400	376	24
	Chemkumilli do.	3 C.	500	570	— 70
	Kallatan channel sluice and under-tunnel ..	3 C.	2,230	1,918	312
	Baswarakodu sluice	3 C.	500	544	— 44
	Annayakodu sluice and under-tunnel	3 C.	3,800	3,975	— 175
	Yelurpad channel sluice, No. 1	3 C.	500	509	— 9
	Concrete sluice No. 5 at 42 miles 58 chains ..	3 C.	200	217	— 17
	Madivada channel	3 L.	500	218	282
	Polimerakodu parallel channel	3 L.	1,100	1,109	— 9
	Yenamadurru drain—Bavarakodu inlet into Gostanadi ..	4 C.	3,000	2,610	390
	Total ..		1,89,825	1,75,283	14,542
Kistna delta system—Eastern section.	Polraz canal—				
	Vadali and Peyeru ramp	2 O.	590	597	— 7
	Dakkonam ramp	2 O.	589	595	— 6
	Kanukollu do.	2 O.	466	439	27
	Lingala ramp	2 O.	438	427	11
	Mandavalli and Perikigudam ramp	2 O.	428	397	31
	Korlapad ramp..	2 O.	376	343	33
	Rudravaram ramp	2 O.	382	350	32
	Syamalambapuram ramp	2 O.	394	371	23
	Rachapatnam ramp	2 O.	300	203	97
	Arthigalapad do.	2 O.	290	244	46
	Kalapalam and Sithanapalli ramp	2 O.	292	220	72
	Kondura ramp	2 O.	322	229	93
	Tadinadu do.	2 O.	306	228	78
	Ampapuram ramp	2 O.	..	207	— 207
	Sitanapalli channel	3 L.	3,350	5,661	—2,311
	Pulleru canal—				
	Garagallagudam ramp	2 O.	560	565	— 5
	Kamanur ramp	2 O.	553	593	— 40
	Peddakurumaddili ramp	2 O.	562	545	17
	Tadivam channel sluice	3 C.	527	437	90
	Chinnavanigudem ramp	3 O.	546	503	43

Statement of Savings and Excesses on completed works, Capital Account, in 1887-88—*cont.*

System.	Name of work.		Estimate.	Expenditure.	Excesses and Savings.
			RS.	RS.	RS.
Kistna delta system—*cont.* Western section.	Bank canal—				
	Kollur lock weir	2 I	1,600	1,443	157
	Vellatur lock weir	2 I.	1,578	1,303	275
	Kuchinopudi north channel head sluice	3 C.	457	455	2
	Commamur canal—				
	Severna aqueduct	2 F.	10,732	10,735	— 3
	Appapuram outlet	..	1,020	1,052	— 32
	Karinchedu bridge	2 G.	9,760	9,738	22
	Coast road bridge	2 G.	11,080	10,688	392
	Jaggarlamudi lock improvements	2 I.	1,100	1,114	— 14
	Cattle crossings at Duggirala	2 O.	990	774	216
	Penugudarpad channel, compensation for land ..	3 L.	54	18	36
	Santaranu side channel, branch No. 1	3 L.	446	441	5
	Main canal—Blasting in 2nd mile	2 O.	500	441	59
	Répalle drain—Kovur affluent bridge at 3 miles 53 chains	4 C.	5,036	4,480	556
	Total ..		55,624	55,836	— 212
Cauvery delta ..	Grand anicut alterations	1 C.	45,540	45,525	15
	Dam at Vennár head alterations	1 C.	10,386	10,423	— 37
	Closing Koveladi calingulah	1 C.	1,270	1,211	59
	Cauvery regulator	2 D.	2,05,390	2,05,402	— 12
	Vennár constructing 36 lascars' sheds	..	2,500	2,520	— 20
	Do. compensation for land	2 B.	38,878	33,958	4,920
	Cauvery and Vennár regulator gates and lanterns with posts	2 O.	190	181	9
	Bank and revetment of Cauvery regulators in rear of nose revetment	2 O.	550	512	38
	Cauvery roughstone apron of the grand anicut ..	2 D.	5,900	5,521	379
	Total ..		3,10,604	3,05,253	5,351
Pennér anicut ..	Kistnapatam canal—Bridge near Tallapudi	2 G.	876	741	135
	Sawepalli canal—				
	Culvert at Kondiapallam	2 G.	265	196	69
	Surplus sluice enlarging	2 H.	8,578	6,990	1,588
	New bridge and regulator at Ranganayakulupet ..	2 G.	8,680	6,869	1,811
	New regulator at workshops	2 D.	2,700	2,657	43
	Total ..		21,099	17,453	3,646
Barur tank ..	Kilarppam eastern sluice	3 C.	3,235	3,171	64
	Do. western sluice	3 C.	3,167	2,757	410
	Total ..		6,402	5,928	474
	The savings in the following works of Sangam anicut system may be added to the lump sum provision for unforeseen works subject to the Government of India sanction of the revised estimate submitted in G.O., No. 393 I., dated 1st July 1887 :—				
Sangam anicut ..	Alleru tank supply channel regulator and bridge ..	3 C.	5,600	5,578	22
	Do. branch channel regulating sluice	3 C.	3,760	3,519	241
	Duvvur branch channel—				
	Extension sluice at 4 miles 14 feet	3 C.	180	110	70
	Sluice at 4 miles 212 feet	3 C.	210	122	88
	Drop No. 2 at 4 miles 282 feet	3 C.	16	12	4
	Sluice at 4 miles 5,232 feet	3 C.	180	175	5
	Do. at 5 miles 2,592 feet	3 C.	235	152	83
	Drop at 5 miles 2,592 feet	3 C.	205	161	44
	Sluice at 6 miles 3,302 feet	3 C.	330	193	137
	Do. at 7 miles 482 feet	3 C.	130	86	44
	Do. at 7 miles 4,147 feet	3 C.	130	89	41
	Retaining wall at end	3 C.	20	6	14
	Siddipuram low level distributary regulating dam ..	3 C.	45	27	18
	Muktapurum and Annareddipalem high level distributary dividing dam	3 C.	175	116	59
	Duvuru branch minor channel at 6 miles 3,302 feet drop	3 C.	155	99	56
	Duvuru branch channel—				
	Excavation and banking 3·8	..	6,820	6,181	639
	Extension Siddipuram high level distributary, excavation and banking	..	380	294	86
	Muktapuram and Annareddipalem high level distributary dividing dam, excavation and banking ..	..	290	283	7
	Minor channel at 6 miles 3,302 feet excavation and banking	..	343	312	31
	Chellayapallam drainage channel	4 L.	6,760	5,958	802
	Eastern channel—				
	No. 3 minor channel at 1 mile	..	430	299	131
	Minor channel from No. 7 mile sluice drop at 1 mile 2,250 feet	3 C.	200	142	58
	Minor channel 3 miles 3,960 feet sluice at 100 feet left bank	3 C.	250	226	24

Statement of Savings and Excesses on completed works, Capital Account, in 1887-88—*cont.*

System.	Name of work.		Estimate.	Expenditure.	Excesses and Savings.
Sangam anicut—*cont.*	Eastern channel—		RS.	RS.	RS.
	Branch from channel 3 miles 3,960 feet right bank drop at 550 feet	3 C.	220	142	78
	drop at 3,226 feet ..	3 C.	160	125	35
	Do. sluice at 2 miles 610 feet left bank	..	250	164	86
	Do. drop at 3 miles 704 feet ..	3 C.	420	352	68
	Do. sluice at 4 miles 775 feet right bank	3 C.	230	161	69
	Do. do. do. left bank	3 C.	230	154	76
	Branch from iron aqueduct 4 miles 4,643 feet ..	..	3,824	2,872	952
	Do. sluice at 4 miles 4,660 feet right bank	3 C.	245	170	75
	Do. sluice at 5 miles 1,773 feet do.	3 C.	320	201	119
	Do. vent at 5 miles 3,600 feet do.	3 C.	83	56	27
	Do. vent at 5 miles 4,123 feet do.	3 C.	83	49	34
	Minor channel right bank 5 miles 200 feet head sluice	..	290	266	24
	Do. from 6 miles 410 feet left bank head sluice	3 C.	420	340	80
	Drop and dividing dam	..	375	280	95
	Drainage culvert 2 miles 3,300 feet, 2nd section ..	..	3,370	2,958	412
	Minor channel from 9 miles 858 feet right bank regulating dam	3 C.	65	33	32
	Do. vent at 1,937 feet	..	140	78	62
	Do. at 10 miles 5,050 feet left bank drop at 1 mile 1,650 feet	..	80	49	31
	Do. from 9 miles 858 feet right bank vent at 1 mile 42 feet	3 C.	140	90	50
	Do. vent at 1 mile 685 feet	3 C.	140	84	56
	No. 1 minor channel at 5 chains embanking ..	3 C.	46	25	21
	" 2 do. 5 chains excavation	3 L.	418	184	234
	" 3 do. at 1 mile excavation	3 L.	470	293	177
	" 4 do. at 1 mile 54 chains	3 L.	335	227	108
	Minor channel right bank 5 miles 200 feet excavation and banking	3 L.	1,185	807	378
	Branch channel from the channel at 3 miles 3,960 feet right bank ..	3 L.	156	172	— 16
	Do. do. new cut ..	3 L.	30	14	16
	Minor channel at 10 miles 5,050 feet right bank excavation and banking	3 L.	390	385	5
	Minor channel from 5 miles 5,200 feet left bank excavation and banking	3 L.	310	243	67
	Minor channel at 9 miles 858 feet, right bank excavation and banking	3 L.	444	343	101
	Cattle ramp, 2nd section	3 O.	2,400	2,191	209
	Minor channel right bank 3 miles 3,960 feet ..	3 O.	..	..	..
	Cattle ramps	..	300	169	131
	Branch from channel at 3 miles 3,960 demarcation stones	3 O.	50	16	34
	Minor channel from No. 6 sluice demarcation stones.	3 O.	65	53	12
	Do. from 5 miles 5,200 feet	3 O.	23	12	11
	Indupur tank supply channel excavation and banking ..	3 L.	490	533	— 43
	Punun tank supply channel converting road culvert into head sluice	3 C.	580	601	— 21
	Southern channel irrigation sluice at 16 miles 3,168 feet.	3 C.	255	259	— 4
	Zuvaladinne branch channel—				
	road culverts	3 C.	3,135	2,713	422
	Regulating sluice	3 C.	495	382	113
	Excavation and banking	3 L.	6,084	5,216	868
	Work sheds	3 O.	230	162	68
	Central channel—				
	Minor channel ¼ mile right bank dividing dam ..	..	250	182	68
	Do. ¼ mile left bank do. ..	3 C.	112	53	59
	Do. from 1st mile sluice do. ..	3 C.	190	115	75
	Yellayapallam branch channel three irrigation sluices ..	3 C.	522	525	— 3
	Total ..		56,894	48,639	8,255
Pelandorai anicut system.	Rajendrapatnam tank	..	1,305	1,411	— 106
Pálár anicut ..	Govindavadi channel, altering and improving the regulator near Tayapakam	2 D.	2,090	2,058	32
	Kambakal channel—				
	Singlepadi sluice alteration	3 C.	17	7	10
	Mahadavamangalam sluice	3 C.	17	7	10
	Do. Perugeru sluice	3 C.	16	7	9
	Kunnantangal sluice	3 C.	9	6	3
	Komantangal do.	3 C.	8	2	6
	Drop in branch channel to Yeknavaram tank ..	3 C.	185	192	— 7
	Do. and dividing dam below Indupakam sluice ..	3 C.	250	246	4
	Do. in Chembrambakam tank channel	3 C.	175	156	19
	Do. in Srívaikuntham tank channel	3 C.	180	161	19
	Perandar tank channel	3 C.	185	171	14
	Drop weir Kunakarambakam tank channel ..	3 C.	175	151	24

Statement of Savings and Excesses on completed works, Capital Account, in 1887-88—*cont.*

System.	Name of work.		Estimate.	Expenditure.	Excesses and Savings.
			RS.	RS.	RS.
Pálár anicut—*cont.*	Mahendravadi channel—				
	Pundi tank calingula	2 H.	75	72	3
	Samudram sluice	2 H.	35	12	23
	Marutheri calingula	2 H.	20	18	2
	Bagavala do.	2 H.	25	24	1
	Museri do.	2 H.	85	83	2
	Earthwork	2 L.	5,460	5,474	— **14**
	Total ..		9,007	8,847	160
Buckingham canal.	Northern canal—				
	Section IV, flood-gate south bank of Kodur river ..	2 I.	15,540	12,945	2,595
	Do. do. in north bank of do.	..	15,540	12,878	2,662
	Section V, constructing an outlet sluice of 10 vents at 150 miles 5 furlongs	2 F (1).	4,640	4,262	378
	Section V, bridge at Ethamukala	2 G.	12,450	12,693	— **243**
	Do. do. at Kothapatam	2 G.	12,850	13,153	— **303**
	Do. flood-gate north bank of Pyderu ..	2 I.	19,060	16,006	3,054
	Do. do. south bank of Iskapalli ..	2 I.	19,080	17,632	1,448
	Do. do. north bank of do. ..	..	19,080	19,034	46
	Do. do. south bank of Chippaleru ..	2 I.	18,100	17,405	695
	Do. do. north bank of do. ..	2 I.	18,100	17,513	587
	Do. do. south bank of Elikeru river ..	2 I.	13,720	11,129	2,591
	Do. do. north bank of do. ..	2 I.	13,720	11,041	2,679
	Do. do. south bank of Poleru river ..	2 I.	18,440	17,220	1,220
	Southern canal—				
	Section II, outlet sluice in 33rd mile	2 F (1).	2,940	2,623	317
	Do. do. in 38th do.	2 F (1).	4,427	4,420	7
	Do. III, masonry inlets	2 F (1).	15,750	15,023	727
	Northern canal—				
	Section V, diversion at Kanuparthi 190 miles $3\frac{1}{2}$ furlongs to 191 miles 4 furlongs	2 L.	11,308	11,405	— **97**
	Section V, inlet in west side of canal at 142 miles 7 furlongs	2 H.	4,275	4,245	30
	Total ..		2,39,020	2,20,627	18,393

ORDER—dated 29th October 1888, No. 649 I., Public Works.

The Examiner of Public Works Accounts is authorized to pass the expenditure shown to have been incurred on the several works enumerated in the foregoing list in excess of the estimates sanctioned for them.

2. To cover the excess expenditure on works of the Kistna delta and Pelandorai anicut systems, Rs. 212 and Rs. 106, respectively, are allotted from the balances at present available for unforeseen works of those systems which will then be reduced to Rs. 2,44,258 and Rs. 497.

3. On receipt of the formal sanction of the Government of India to the revised estimates for the Sangam anicut project, forwarded with G.O., No. 393 I., dated 1st July 1887, the saving realized on the completed works of that system will be credited to the provision available for unforeseen works.

4. The savings effected on the remaining systems will be added to the provision already existing for unforeseen works of the systems concerned, which will then be increased as shown below:—

	RS.
Godávari delta	47,265
Cauvery delta	6,993
Pennér anicut	8,313
Barur tank	5,577
Pálár anicut	2,408
Buckingham canal	24,436

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineers, I, II, IV, V and VI Circles.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.
ACCOUNT.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 29th.

Recd. *Encl.*

G.O., 29th Oct. 1888, No. 649 I.

OCTOBER.

Irrigation and Navigation Systems

Orders on statement of savings and excesses on completed works connected with the —.

GOVERNMENT OF MADRAS

PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers:—

From G. T. WALCH, Esq., Superintending Engineer, I Circle, to the Collector of the Kistna District, dated Ellore, 8th July 1888, No. 953 G.D.

Agadahlunka Channel.

The Chief Engineer for Irrigation has informed me that he considers it advisable that some arrangement should be made with you for the taking over by this department of a portion of the channel, dug by private persons, referred to in your letter to me No. 5155, dated 7th October 1887, which letter I replied to in my No. 1785, dated 19th October 1885.

2. In accordance with orders therefore I suggest the following arrangements:—

(*a*) The Revenue authorities, Kistna, to state the maximum total area in each village along the channel for which they will accept darkhasts for wet cultivation up to a grand total of 3,500 * acres, which must not be exceeded.

* Out of 4,000 acres 500 reserved for Godávari lands in Gundagole and Pothanur.

(*b*) This department to take up the privately dug extension so far as, and only so far as, may be considered necessary to prevent private disputes about the supply of water from the channel for that 3,500 acres, but *not under any circumstances to take up beyond* $10\frac{1}{2}$ *miles.* I fix this limit not only because it is far enough, unnecessarily far I believe, to secure the object aimed at, but because experience has proved to us that towards the end of such long minor distributaries, with claims on them many miles higher up, satisfactory supply is almost impossible, and because also I am convinced that the line of the privately dug channel beyond the point named, running close to the edge of the lunka, is one which it would be a dead loss to Government to undertake to keep up.

(*c*) The portion of the channel which this department may decide to take over to be transferred to it without claim for compensation, and with a width of land of 75 feet on each side of the centre line of the channel without which provision it will be impossible to get the earth necessary for making up and repairing the banks. The width of land stipulated for is great for such a small distributary, but this results from the unnecessary widths between its banks of the existing channel and because there has for some distance been dug an utterly useless side channel on either side of it.

(*d*) This department to have nothing whatever to do with the branch which goes off to the south-west in the 10th mile.

3. In arranging the areas referred to in clause (*a*) above, I would ask your attention to the precedence of claim for water which is the recognized right of lands lying nearest the source of supply, and I would also remind you that the Agadahlunka channel and its works were constructed specially for the Agadahlunka and Chettunapad lands—see Proceedings of Madras Government, No. 1068, dated 27th April 1884, and No. 2065, dated 30th July 1884.

From A. T. ARUNDEL, Esq., Collector of the Kistna District, to the Superintending Engineer, I Circle, dated Masulipatam, 16th August 1888, No. 4547.

Your letter No. 953 G.D., dated 8th July 1888, reached me just before I visited the Colair and the Agadahlunka channel villages to take steps for the sale for arrears of revenue of all the lands hitherto held by Mr. Yore, and I have been able to consider your proposals on the spot.

2. Without troubling you with details I may say that such control as Mr. Yore ever had over the Agadahlunka channel or any part of it has now ceased and has been assumed by me on behalf of Government, at whose disposal and under whose orders it will henceforth remain.

3. With regard to your specific proposals, para. 2 *(a)*, the following statement shows the irrigable area in each village and the extent irrigated in fasli 1297 :—

	Extent irrigable.	Extent irrigated in fasli 1297.
	ACS.	ACS.
1. Agadahlunka	2,200	890 08
2. Chettunapad	800	590·80
3. Mallavaram	900	389·29
4 Paidichintapad	715	228·51
5. Prattikollalunka	707·60	...
6. Kokkirayalunka	600	...
Total ...	5,922·60	2,098·68

These figures are subject to correction after completion of the revenue survey and demarcation which has just begun.

4. You will see that there is ample room for extension of irrigation in the upper villages beyond the area irrigated last year before the maximum of 3,500 acres named by you is reached. If, however, the total irrigable area of each village beginning with the first were actually irrigated, the total of 3,500 acres would be reached with 500 acres out of 900 in Mallavaram, and Paidichintapad would be allowed no irrigation at all although 228 acres were cultivated last year. It will no doubt be a considerable time before the maximum is reached in any one village, and although it is probable that the extension will progress much in the same ratio as at present, I have no data on which to fix the limit for each village. In Paidichintapad a considerable area being under the south-west branch channel will not be irrigated. I would therefore propose that the expansion be left to take its natural course in the first four villages. As in the case of other delta lands, when application is made for water it will be referred to the Delta Superintendent who, under your orders, will record a refusal as soon as the total area under irrigation reaches the maximum of 3,500 acres.

5. I quite agree with your view in para. 3 of your letter that precedence should be given to the claims of lands near the source of supply, and if when the irrigated area is nearing the maximum there should be conflicting claims between the upper and the lower villages for further extension, it will be understood that the lands of the upper villages will receive the supply.

6. To meet your views as expressed in para. 2 *(b)* and *(d)*, I have thrown a bund across the main channel at the $10\frac{1}{2}$ miles and across the south-west branch channel at its head. These bunds together with the channel can now be taken charge of by your department, and without your consent no water is to pass below them. I was informed that some 50 acres of land in Paidichintapad were irrigated last year from the south-west branch, but without your permission this will not be allowed again.

7. The villages of Prattikollalunka and Kokkirayalunka being below the bunds will receive no irrigation from the channel at all.

8. Both channels below as well as above the points mentioned are Government poramboke and are amenable to your control.

9. As requested in para. 2 *(c)*, a margin of 75 feet on each side of the channel measured from its middle is reserved with the channel as poramboke free of compensation and will be demarcated by the Survey Department.

No. 160 I.

Note by the Chief Engineer for Irrigation.

With reference to the Honorable Member's remarks, dated 18th June 1888, regarding the distribution of water of the Agadahlunka channel, a branch of the Ellore canal, Godávari system, irrigating land in the Kistna district, the Superintending Engineer was requested, in communication with the Collector, to make proposals for the irregalur cultivation to be stopped and for arrangements to be made for the distribution of the water from this channel to be under the Public Works Department, the same as the other channels in the Godávari.

The Superintending Engineer with his letter No 1490 G.D., dated 28th August 1888, forwards the Collector's reply (No. 4547, dated 16th August 1888) to his letter No. 953 G.D. of the 8th July 1888 making certain proposals, and I think the arrangements proposed and agreed to by these officers are satisfactory and may be accepted.

2. It has to be noted that most of the difficulties of the case have ceased owing to the lands taken up by Mr. Yore having been resumed by Government.

3. It is proposed that the Public Works Department should take charge of the extension of the Agadahlunka channel that was privately and irregularly dug as far as the 10½ miles from the head, and that the distribution of water from the channel as far as this shall be under the Public Works Department. That the total irrigation under this channel shall be restricted to 4,000 acres (of this 3,500 acres are in the Kistna district). The irrigation in the Kistna district in 1887-88 was 2,0?8 acres; this irrigation be allowed to extend to 3,500 in the villages of—

(1) Agadahlunka,
(2) Chettunapad,
(3) Mallavaram, and
(4) Paidichintapad;

but as in the case of other delta channels when applications are made for water they will be referred to the Public Works Department and when the total irrigation in these four villages reaches 3,500 acres, no further extension will be allowed.

The enclosed draft order will, I think, meet the case.

OOTACAMUND,
20th September 1888.

(Signed) H. R. MEAD, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

ORDER—dated 29th October 1888, No. 650 I., Public Works.

His Excellency the Governor in Council approves of the proposals made with regard to the Agadahlunka channel and directs that the Public Works Department take charge of the channel and the distribution of water from it for 10½ miles from the head, and further directs that the irrigated area in the Kistna district under this channel be restricted to 3,500 acres.

2. The Superintending Engineer will see that the necessary works, to enable the Public Works Department to carry out the proper regulation of water from this channel, are carried out as soon as practicable.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.
" Revenue Department.

IRRIGATION.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 29th.

Recd. *Encl.*

G.O., 29th Oct. 1888, No. 650 I.

OCTOBER.

Agadahlunka Channel

The proposals for the transfer to the Public Works Department of the charge of the — and the distribution of water from it for $10\frac{1}{2}$ miles from the head, approved with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.

Read—the following paper :—

From R. B. BUCKLEY, Esq., Under-Secretary to the Government of India, Public Works Department (Civil Works—Irrigation), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 15th October 1888, No. 185 I.

I am directed to acknowledge the receipt of your endorsement No. 333 I., dated the 8th June 1888, forwarding the plans and estimates, amounting to Rs. 9,48,000, for improving and extending the Kalingaroyen channel in the Coimbatore division of the Madras Presidency.

2. In reply, I am directed to communicate the following remarks and observations :—

The information furnished on the engineering details of the project is meagre. The index map (in two sheets) shows only the lines of the present and proposed canal, and the sheet of sections (longitudinal and transverse) gives only a general idea of what the Executive Engineer of the B. Project division proposed to do.

3. In his note, dated the 28th May 1888, the Chief Engineer approves of the project as submitted by the Executive Engineer with the exception of certain points. The channel will, it is said, be improved, the present irregular fall being corrected by means of drops and a uniform bedfall of 1 foot per mile worked out, &c. It appears, however, from the longitudinal section that a uniform slope of 1 foot per mile was not contemplated by the Executive Engineer.

4. The Chief Engineer does not approve of the Executive Engineer's proposal to remodel the section of the channel by adding earth to the present banks, but proposes to effect it by a systematic planting along both banks and to revet parts of the banks wherever necessary. It is not understood what is meant by systematic planting, nor how it will effect the object in view.

5. As regards the regrading of the old channel, it appears that the floors of those bridges which cannot be altered should have been made obligatory points and the bed slopes worked from them as centres. Where the existing bridges have too little waterway, the fault could as a rule be remedied by locating a drop at the bridge; in no case should bridge floors be allowed to stand up over the bed and obstruct the flow of the water. The provision of height of top of proposed banks over the full supply of water in the channels seems to be excessive. In other canals in India the general height is 3 feet, which includes the height of dowel on the edge of the bank. In the present case the height varies from 3½ to 5½ feet. The bed slopes of the remodelled channel should be such as will, as far as possible, give an even velocity.

6. The crossing of the Nóyil river appears to present some rather unusual difficulties. The river is 250 feet wide by 8 feet deep in flood; its bed slope is 14 feet per mile. The bridges which already exist over this river are in the backwater of the Cauvery. The Chief Engineer does not approve of the site of the aqueduct selected by the Executive Engineer and proposes to place it lower down the river, but he does not offer any criticism on the design which seems to require modification. The size of the drainages which cross the canal channels is not shown anywhere; if their discharge

when in flood bears any considerable proportion to that of the canal, some better arrangement than that proposed at para. 14, page 9 of the Executive Engineer's report must be made, or the canal will constantly be getting gorged with flood water and choked with silt.

7. A plan and description of Mr. Target's pipe sluice and regulating box, referred to in para. 16 of the Executive Engineer's report, should be furnished.

8. There seems to be no doubt that the project will come up to the standard of a Productive public work, and may be eventually recommended to the Secretary of State for India for sanction. But I am to request that the project may be revised in the light of the remarks made in the preceding paragraphs and resubmitted to the Government of India with more complete plans of the proposed works.

9. The plans received with your letter under reply are returned herewith.

Order—dated 30th October 1888, No. 651 I., Public Works.

Communicated to the Chief Engineer for Irrigation for early attention.

(True Extract.)

(Signed) G. T. WALCH,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation, with four plans.
,, Superintending Engineer, IV Circle.
,, Examiner, Public Works Accounts.
,, Revenue Department.

IRRIGATION.

Govt. of {1888} Madras.

PUBLIC WORKS.

Dated October, 30th.

Recd. *Encl.*

G.O., 30th Oct. 1888, No. 651 I.

OCTOBER.

Kalingaroyen Channel

Letter from the Government of India communicating certain remarks and observations on the plans and estimates for improving and extending the —, communicated to the Chief Engineer for Irrigation for early attention.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

TABULAR STATEMENT OF MISCELLANEOUS PROCEEDINGS AND MATTERS OF ROUTINE,

IRRIGATION,

FOR THE MONTH OF OCTOBER 1888.

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Appropriation Return for August 1888, forwarded to the Accountant-General, Public Works Department.	1st Oct. 1888, No. 574 I.	14th Sept. 1888, No. 546 I. 26th July 1888, Nos. 438-39 I.
Experimental survey of two villages in the Godávari District.—Proceedings in the Revenue Department, communicating report on the —, communicated to the Chief Engineer for Irrigation.	1st do. do. No. 575 I.	......
Financial results of Irrigation operations.—Letter from the Government of India, requesting early submission of the returns of —, communicated to the Examiner, Public Works Accounts.	1st do. do. No. 576 I.	......
Sale-proceeds of Tank-bed lands.—Proceedings in the Revenue Department communicating, with remarks, papers regarding —, communicated to the Chief Engineer for Irrigation.	3rd do. do. No. 585 I.	......
Water-tax.—Proceedings in the Revenue Department passing orders on Board's Proceedings regarding exemption of one Venkatappa, Godávari district, from payment of —, communicated to the Chief Engineer for Irrigation.	3rd do. do. No. 586 I.	......
Water-tax.—Proceedings in the Revenue Department passing orders on correspondence regarding refund of — collected on certain zemindari lands, communicated to the Chief Engineer for Irrigation.	3rd do. do. No. 587 I.	......
Water-rate.—Proceedings in the Revenue Department passing orders on Board's Proceedings regarding — to be paid by the Rajah of Pithapuram, Godávari district, communicated to the Chief Engineer for Irrigation.	5th do. do. No. 588 I.	......
Sangam Project.—Proceedings in the Revenue Department calling on the Board of Revenue to submit the forecast statement connected with the — required by the Government of India, recorded.	6th do. do. No. 589 I.	......

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Minor Irrigation Works for June and July 1888.—Proceedings of the Board of Revenue reviewing progress reports of —, recorded.	8th Oct. 1888, No. 590 I.	......
Bridge over the old Vennár Regulator.—Proceedings in the Revenue Department directing the Collector to submit proposals for working the ferry to meet the traffic in consequence of the broken —, recorded.	8th do. do. No. 591 I.	......
Canal Water.—Proceedings in the Revenue Department sanctioning grant of — for dry crops on payment of eight annas per acre in the Kurnool district, should the season continue unfavorable, recorded.	8th do. do. No. 592 I.	......
Sandúr Estate.—Proceedings in the Revenue Department transferring to the Political Department note by the Chief Engineer for Irrigation on the proposal for an irrigation work in the —, recorded.	8th do. do. No. 593 I.	29th Aug. 1888, No. 3261 C. 18th June 1883, No. 487 I.
Kodanthorai tank, Trichinopoly District.—Proceedings in the Revenue Department calling for further information before deciding in the abandonment of the — as an imperial work, communicated to the Chief Engineer for Irrigation.	9th do. do. No. 595 I.	......
Loans to certain Shrotriemdars in the Chingleput District.—Proceedings in the Revenue Department, communicating letter from the Collector reporting grant of — under the Land Improvement Act for carrying out certain works, recorded.	10th do. do. No. 598 I.	1st Aug. 1888, No. 450 I.
Errata in G.O., No. 524 I. of 7th September 1888, regarding modifications of allotments in the Kistna delta for 1888-89.	11th do. do. No. 600 I.	......
Minor Irrigation Works.—Proceedings of the Board of Revenue stating that certificates granted by Deputy Tahsildars for execution of — within their ranges may be accepted in cases where Tahsildars cannot inspect in person, recorded.	12th do. do. No. 605 I.	12th Oct. 1887, No. 623 I. 22nd July 1887, No. 435 I.
Objectionable outlay incurred up to end of April 1888.—Call from the Government of India for early reply to reference regarding —, recorded.	16th do. do. No. 609 I.	......
Old shutter shed at Athiani, Tanjore division.—Sale of — by auction, sanctioned.	18th do. do. No. 614 I.	......
Loan to Shrotriemdars of Ottivakam village, Chingleput District.—Proceedings in the Revenue Department recording letter from the Collector intimating that the — was granted without interest, recorded.	19th do. do. No. 615 I.	......
Financial Results of Irrigation.— Call from the Government of India for statements of — for 1881, recorded.	19th do. do. No. 616 I.	1st Oct. 1888, No. 576 I.
Gunnavaram aqueduct, Godávari District.—Irrecoverable balance of advance made to laborers employed on repairing damage to the — ordered to be charged off to the work.	19th do. do. No. 617 I.	10th Oct. 1884, No. 911 I. 7th Sept. 1885, No. 762 I.
Statement of objectionable items in the account of the I Circle.—Orders on — for June 1888.	24th do. do. No. 620 I.	......

Subjects.	Number and Date of Order.	Numbers and Dates of previous Orders.
Madapalli Canal.—Petition from ryots of Ellore, complaining of the alignment of the —, recorded.	25th Oct. 1888. No. 639 I.	1st Oct. 1888, No. 573 I. 2nd June 1888, No. 317 I. 18th Sept. 1886, No. 644 I.
Statement of objectionable items in the accounts of the VI Circle.—Orders on — for June 1888.	25th do. do. No. 640 I.	7th Aug. 1888, No. 468 I.
Statement of objectionable items in the accounts of the V Circle.—Orders on — for June 1888.	25th do. do. No. 641 I.	1st Aug. 1888, No. 449 I.
Statement of objectionable items in the accounts of the I Circle.—Orders on — for May 1888.	25th do. do. No. 642 I.	......
Statement of objectionable items in the accounts of the III Circle.—Orders on — for July 1888.	25th do. do. No. 643 I.	......
Statement of objectionable items in the accounts of the V Circle.—Orders on — for July 1888.	25th do. do. No. 644 I.	14th Sept. 1888, No. 541 I.
Statement of objectionable items in the accounts of the IV Circle.—Orders on — for July 1888.	25th do. do. No. 645 I.	22nd Sept. 1888, No. 560 I.
Statement of objectionable items in the accounts of the VI Circle.—Orders on — for July 1888.	25th do. do. No. 646 I.	21st Sept. 1888, No. 556 I. 11th Sept. 1888, No. 533 I.
Statement of objectionable items in the accounts of the I Circle.—Orders on — for June 1888.	25th do. do. No. 647 I.	......
Irrigation work in Sandúr.—Proceedings, Political Department, passing orders regarding the construction of an —, communicated to the Chief Engineer for Irrigation for attention.	30th do. do. No. 652 I.	......